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The Conditioning Effects Of Religiosity On The Relationship Between Strain, Negative Emotions, And Delinquency: A Longitudinal Assessment Of General Strain Theory

Christopher W. Purser

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THE CONDITIONING EFFECTS OF RELIGIOSITY ON THE RELATIONSHIP
BETWEEN STRAIN, NEGATIVE EMOTIONS, AND DELINQUENCY: A
LONGITUDINAL ASSESSMENT OF GENERAL STRAIN THEORY.

By

Christopher Wayne Purser

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Sociology
in the Department of Sociology

Mississippi State, Mississippi

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Robert Agnew's (1992) General Strain Theory significantly revitalized traditional scholarship in the anomie/strain tradition by offering a general theory of crime; purported to account for both criminal and analogous behaviors. GST specifically extends anomie/strain theory by introducing new sources of strain (i.e. loss of positively valued stimuli, presentation of noxious stimuli) into the theoretical framework, as well as elucidating the causal pathways (including mediating and moderating effects) leading from the experience of strain to deviant coping mechanisms.

An emerging trend within GST is the identification of previously untapped sources of strain (e.g. victimization, discrimination) that ostensibly have deviance-generating properties. Concerning the latter trend, recent empirical iterations of GST have also introduced internal (e.g. self-esteem) and external conditioning factors (e.g. social control) that have been found to exert a mediating effect on the relationship between strain-generated negative emotions and deviant coping responses. Jang and

Johnson-in a recent series of studies (2003, 2005)-offered a crucial extension to the General Strain Theory (GST) literature by finding that religiosity at least partially moderates the deviance-generating effects of strain-induced negative affect among a sample of African Americans.

The current study offers a key extension to the Jang and Johnson thesis by offering the most comprehensive examination of the central tenets of their research to a nationally-representative, longitudinal sample of adolescents.

Results from Waves I and II of the National Longitudinal Study of Adolescent Health reveal support for GST in general, and qualified support for the Jang/Johnson thesis in particular. Strain was found to be a significant, positive predictor of depression and anger. With regard to the fundamental hypothesis of the current research, partial support was garnered for the Jang and Johnson hypothesis. In particular, religiosity only offered *direct* protective effects when predicting drug use, and failed to condition the relationship of strain on deviance across any of the deviance measures. Consequently, religiosity failed to moderate the effects of strain on deviant coping strategies among the full sample, although significant conditioning effects were observed for *female* deviance. Consequently, these results largely attribute the Jang and Johnson findings to elevated levels of religiosity in their sample.

DEDICATION

I would like to dedicate this research to a number of individuals that offered invaluable encouragement and support throughout this lengthy process. First and foremost, I dedicate this work to my loving wife, Stephanie, as well as my beautiful daughter, Claudia. Your persistent support helped sustain my efforts during the tough times, and for that I am forever grateful. This research is also dedicated to my parents, Wayne and Tina Purser, as well as my sister, Amy Witt. My deepest appreciation goes out to each and every one of you; we did it!

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CHAPTER I

INTRODUCTION

An emerging trend in criminology over the past 20 years has been the reformulation of classical theoretical perspectives. In particular, in recent years the discipline has witnessed the reconceptualization of control (Gottfredson and Hirschi, 1990; Sampson and Laub, 1993), ecological (Bursik, 1988; Sampson and Groves, 1989), and anomie/strain theories (Agnew, 1992). Accompanying this trend of theoretical reevaluation has been a shift toward general or integrated theories of deviant behavior, which are purported to account for a wide variety of criminal and analogous acts (Akers, 1985; Gottfredson and Hirschi, 1990; Tittle, 1995).

Agnew's (1992) General Strain Theory encapsulates both of the aforementioned trends in criminology by reformulating classic anomie/strain theory into a general theory of criminal and deviant behaviors. While early versions of strain theory (Merton 1938, Cohen, 1955 and Cloward and Ohlin 1959) initially enjoyed a considerable amount of empirical attention, anomie/strain theories subsequently fell out of favor; at least partially attributable to a lack of empirical support. Agnew (1992) essentially single-handedly revitalized anomie/strain theory with his General Strain theory, among the more prominent theoretical developments in criminology over the past 20 years. Agnew offers a substantial enhancement in theoretical elaboration by providing a more detailed

articulation of the concept of strain, as well as the mechanisms by which strain is linked to criminal/deviant behavior.

Agnew begins by offering a conceivable explanation as to the null findings of empirical assessments related to classic anomie/strain theory. In particular, Agnew suggests that early assessments of anomie/strain theory were inadequate due to their operationalization of strain as a disjunction between one's aspirations and expectations. This treatment of strain likely led to a lack of support for classic anomie/strain due to the benign nature of the disjunction between aspirations and expectations. Agnew, conversely, redirected the focus of strain theory to the potentially criminogenic consequences of negative relationships with others. In particular, Agnew offers a fundamental theoretical specification by extending strain theory to include two previously unmentioned sources of strain: (1) the removal of positively valued stimuli; and (2) the presentation of noxious stimuli. Therefore, strain results not only when one is blocked from achieving positively valued goals, but also when something of value is removed from the individual (e.g. the death of a loved one, parental divorce), and when something unpleasant is administered to the individual (e.g. an argument with a lover, teacher). This theoretical specification represents a unique and salient contribution to the scientific study of crime/delinquency- as most theories of delinquency focus on positive relationships, or in other words, relationships that individuals find pleasurable (Hay 2003).

Agnew (1992) insists that, in the face of strain, individuals will not invariably resort to deviant coping strategies. Rather, the pathway from strain to deviant coping

strategies is indirect, and operates through the intervening variable of negative affect. Specifically, an individual faced with strains that are long in duration, intense, challenges one's central identity, and are accompanied by low social control are likely to lead to a host of negative emotions, including: anger, depression, guilt, anxiety, and resentment (Agnew, 2001). Of these strain-induced negative affective states, Agnew posits that the most consequential in predicting a criminal coping response, especially a violent coping response, is anger. Agnew suggests that individuals that experience anger are faced with a desire for retaliatory action, and are therefore more likely to externalize their anger by engaging in a host of aggressive acts; including crime/delinquency. Conversely, individuals that respond to strain with other negative emotions (e.g. depression, anxiety, guilt) are more likely to employ non-violent coping mechanisms (e.g. drug use, suicide) (Broidy, 2001; Broidy and Agnew, 1997). From this vantage point, delinquency can be viewed, paradoxically, as an efficacious problem-solving strategy. Incidentally, research has offered credence to this postulation by revealing that delinquent coping actually attenuates the negative affect produced by strain (Brezina, 1996).

In addition to specifying the mechanisms by which strain influences delinquency, Agnew (1992) also advances a host of conditioning factors that are purported to moderate the relationship between strain and negative affect, and-more consequently-the relationship between negative affect and delinquency. Some of these conditioning effects are presumed to be crime-inhibiting in nature; such as self-esteem, social control, and social support. In contrast, the effects of other conditioning variables on the strain/crime relationship can either be viewed as either mixed (e.g. self-efficacy, see Paternoster and

Mazerolle, 1994) or aggravating (e.g. deviant peers, low self-control, deviant beliefs) (see Hoffman and Miller, 1999; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004).

Empirical Status of GST

Research has generally offered unified support for the notion that strain and delinquency share a significant, positive relationship (Agnew and White, 1992; 2001; Agnew, Brezina, Wright, and Cullen, 2002; Baron, 2004; Brezina 1996; 1998, Broidy, 2001; Jang and Johnson, 2003; 2005; Mazerolle and Piquero 1997; 1998; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004; Robbers, 2004; Slocum, Simpson, and Smith, 2005; see Asseltine, Gore, and Gordon, 2000 for evidence to the contrary).

However, the empirical literature is more ambiguous when it comes to offering confirmation for the mediating and conditioning effects of endogenous variables, and it appears that these relationships are less straight-forward, and decidedly more intricate than originally positioned (Agnew, 2001; Broidy 2001; Broidy and Agnew, 1997; Jang and Johnson, 2003).

With regard to contemporary scholarship in the GST tradition, the focus is increasingly in two areas: (1) identifying new sources of strain, as well as how these strains (and the specific responses to these strains) are enmeshed in the context of race, class, and gender (Agnew, 2001; 2002; Broidy and Agnew 1997; Broidy, 2001; Eitle, 2003; Eitle and Turner, 2003; Hay, 2003; 2006; Jang, 2007; Jang and Lyons, 2008; Robbers, 2004; Sharp, Brewster, and RedHawk-Love, 2004); and (2) the further specification of the strain/crime relationship-in particular fleshing out the manner in

which strain relates to criminal coping by examining new responses to strain (e.g. inner versus outer directed emotional reactions)- and illuminating new conditioning effects that serve to deter/amplify the criminogenic properties of strain-induced negative affect (Jang and Johnson, 2003; 2005). Related to the former, recent studies have identified a host of new sources of strain, including physical and vicarious victimization (Agnew, 2001; 2002; Hay and Evans, 2006; Hutchinson-Wallace, Patchin, and May, 2005), gender/race based discrimination (Eitle, 2003; Eitle and Turner, 2003), and health-related strains (Sharp, Brewster, and RedHawk-Love, 2004). Concerning the later development in GST, emerging research conducted within the past decade has proposed new conditioning effects that are hypothesized to moderate the relationship between negative affect and strain, as well as negative affect and delinquency (Jang and Johnson, 2003; 2005). In particular, the conditioning effect that is currently receiving the abundance of empirical attention is religiosity (Jang, 2007; Jang and Johnson 2003, 2005; Johnson and Morris, 2008; Piquero and Sealock, 2004). The ability of religiosity to moderate the strain/negative affect relationship was merely inferred by Piquero and Sealock (2004), and later explicitly examined by Jang and Johnson (2003, 2005), as well as Johnson and Morris (2008). Before discussing the possible relationships among strain, negative affect, and religiosity, I provide a more general discussion of the association between religion and crime.

Religiosity and Crime

Religiosity has a central position in the criminological literature as a robust, inhibitor of delinquency, both at the individual (Burkett, 1993; Burkett and White, 1974; Cochran, 1988; 1989; Tittle and Welch) and ecological level (Lee, 2005; Peace and Haynie, 2004; Stack and Kpsowa, 2006; Stark, Kent, and Doyle, 1982). Specifically, individuals that are high in religiosity are purported to be shielded from involvement in criminal behavior; as religiosity serves as a salient form of social (e.g. religious attendance, participation) and inner (religiosity) control. While the initial studies in this area refuted the religiosity/crime relationship, implying that religiosity was inconsequential to the prediction of individual delinquent/criminal behavior (Hirschi and Stark, 1969), later studies-offering more rigorous operationalization procedures (i.e. multidimensional measures) of the construct (see Johnson, De Li, Larson, and McCullough, 2000 for a systematic review of the religiosity/crime literature)-began to garner confirmatory results. A noteworthy finding that is particularly relevant to the current research is that the effects of religiosity on crime have been found to be particularly robust for offenses that violate moral (e.g. gambling, alcohol use, prostitution) as opposed to secular codes of conduct (see Baier and White, 2001; Burkett and White 1974; Johnson, De Li, Larson, and McCullough, 2000).

While the religiosity/crime relationship appears to be generally established in the empirical literature, the manner by which religiosity exerts its effects on crime is somewhat ambiguous. Specifically, it could be that the religiosity/crime relationship is direct, indirect, or spurious. While contemporary research refutes the claim of

spuriousness (see Johnson et al. 2001 for an example); the notion that the religiosity crime relationship is indirect has received more academic support (Burkett and Warren, 1987; Benda and Corwyn, 1997; Simons, Simons, and Conger, 2004). The Simons et al. (2004) piece essentially discovers that religiosity deters criminal behavior through its relationship with broader criminological theories (i.e. social control, and differential association). In other words, religiosity enhances social control while it simultaneously deters the formation of deviant peer networks; thereby inhibiting delinquent behavior. While most of the studies in this tradition have found that the religiosity/crime relationship primarily operates through the intervening effects of social control and differential association, few have positioned religiosity as a moderating variable that has a more proximate effect on crime (Jang and Johnson, 2003; 2005).

Strain, Religiosity, and Delinquency

As previously mentioned, there have been a relatively small number of empirical studies (see Jang and Johnson 2003, 2005; Johnson and Morris, 2008) that assess the ability of religiosity to serve as a coping mechanism to stress. In this context, religiosity acts as a buffer to strain-induced negative emotions, thereby deterring criminal adaptations to strain. Jang and Johnson conducted a series of studies in this tradition, which serve as the point of departure for the current study. The first article represented a demarcation of the manner in which religiosity conditions the strain/crime relationship, while the second article more specifically applied this specification to gender differences in crime.

In their seminal study, Jang and Johnson (2003) posit that not only is the relationship between strain, negative emotions, and criminal behavior fully mediated by negative emotions, but more importantly, religiosity functions as a conditioning factor that potentially affects the selection of available coping strategies. The idea is that religiosity, for those individuals that have elevated levels of the construct, effectively cushions the individual from the criminogenic consequences of strain-related distress. Moreover, religiously committed individuals are less likely to experience outer-directed emotions (e.g. anger) when faced with strain, and this efficiently prevents the adaptation of criminal coping mechanisms. This research makes substantial contributions to the GST literature by demonstrating that religiosity directly and indirectly shields strained individuals from crime.

In a related study, Jang and Johnson (2005) found that the gender gap in criminal offending is at least partially attributable to gender differences in reaction to strain. Specifically, females are disproportionately more likely to experience inner-directed negative emotions in response to strain; which can partially be attributed to the higher levels of religiosity among females. Furthermore, females, as a result of their higher levels of religiosity, are less likely to use criminal coping mechanisms as a means of alleviating strain-induced distress. Perhaps most intriguing was the finding that, even at equal levels, religiosity has a more crime-inhibiting effect for females (Jang and Johnson, 2007).

While the work of Jang and Johnson offers meaningful augmentations to GST, the studies suffer from a host of liabilities that will effectively serve as the central focus of

the current research. Most notably, Jang and Johnson employ the use of a non-representative (i.e. African Americans), cross-sectional sample in each of their studies. The selection of this sample potentially introduces bias into the results due to the heightened levels of religiosity among African Americans. In the wake of the integral work of Jang and Johnson (2003, 2005) within the GST paradigm, there has been at least one recent study that has attempted to offer a longitudinal test of the Jang/Johnson thesis among a nationally-representative sample of adolescents. In particular, Johnson and Morris (2008), using data from Waves I and II of the National Longitudinal Study of Adolescent Health, find limited evidence in support of the conditioning effects of religiosity on the relationship between strain, negative emotions, and delinquent outcomes; in the process refuting the work of Jang and Johnson. The Johnson and Morris article, while significantly augmenting the Jang and Johnson thesis in particular, suffered from a number of shortcomings (conceptualization of strain, measurement issues) that have been addressed in the current research.

Statement of Problem

The current study attempts to specifically extend the influential work of Jang and Johnson by offering a longitudinal test of their hypotheses, using a nationally representative sample of adolescents. Specifically, I employ the use of Waves I and II of the National Longitudinal Study of Adolescent Health (Add Health) for purposes of assessing the relationship between strain, negative emotions, conditioning variables, and delinquency. A central focus of this research will be to ascertain if the conditioning

effects of religiosity on the strain/negative affect/delinquency relationship can be applied to a more general population, or are these effects only germane among samples with elevated levels of religiosity (e.g. African Americans, females). Therefore, this project closely scrutinizes the “general” effects of GST, along with variables purported to be prominent in the GST/crime relationship.

As will be discussed in greater detail later, this research will significantly enhance theorizing in this area by offering a more rigorous examination of the Jang/Johnson thesis; including more robust measures of relevant variables (religiosity, strain, and deviance in particular), as well as providing more conservative estimation procedures (in particular for handling rare-event count outcomes) when testing relevant hypotheses.

This project begins with a comprehensive rendering of the GST literature, followed by a concise review of the religiosity/crime literature. This will be followed by a presentation of the conceptual model and the corresponding hypotheses for purposes of clearly delineating the research questions posed in this study. An ensuing discussion of the data and methods used in the study will be provided. This section provides a thorough description of the sample used in this study, along with a discussion on the operationalization of all variables. This work concludes with the presentation of descriptive and multivariate analyses-testing the central hypotheses of the study, followed by a discussion of the relevance/contribution of this research to the larger GST literature.

CHAPTER II

LITERATURE REVIEW

This chapter discusses four research literatures relevant to the present study: research on the relationship between classic anomie/strain theory and crime; research on general strain theory and crime; research on the relationship between religiosity and crime; and lastly research on the relationship between general strain theory, religiosity, and crime. This chapter will begin with a detailed discussion of the genesis and evolution of research in the anomie/strain tradition, beginning with the foundational contributions of Emile Durkheim.

Etiology of Anomie/Strain Theory

It can be contended that while anomie and strain theories share many similarities, there are some stark differences that serve to differentiate the two. Modern permutations of these theories can be traced back to the seminal work of Merton (1938), and other key contributions offered by Cohen (1955) and Cloward and Ohlin (1960). However, all derivations of anomie/strain theory stem from the classical works of Durkheim.

Theoretical Roots: Durkheim

The watershed of all contemporary theorizing within the anomie/strain paradigm can be easily traced back to the influential works of Durkheim (1965, 1951). The term “anomie” itself first appeared in his infamous work, *Suicide* (first published in 1897). Durkheim held two vastly contradictory views on crime; asserting that crime in societies characterized by mechanical solidarity is quite normal, only to later describe crime as being a social pathology in modern societies, rife with anomie.

Durkheim argues in *The Rules of the Sociological Method* (1965) that crime is found in virtually all societies and serves a variety of vital social functions; such as clarifying rules and reaffirming moral boundaries. Here, Durkheim is referring to the premodern society, one that is held together by the likeness among its people. Essentially, this society derives its solidarity through this so-called “collective conscience”, part of which being its criminal code. Durkheim goes as far to say that the “abnormal” society would be one without crime, and that even if a society were to eradicate all crime, the criminal code would simply be expanded to include rather innocuous acts previously viewed as non-criminal (Durkheim, 1965).

Things begin to change as the pre-modern society is transcended by the industrialized, modern society. Durkheim noted that the industrial revolution in his native France, with its division of labor, had dismantled the traditional mechanical solidarity (e.g. religion) and replaced it with a more organic form of solidarity. In the industrialized society, the collective conscience erodes, and society is essentially held together by interdependence. During these periods of rapid social change, it becomes

extremely arduous for a society's normative and moral standards to keep pace with the burgeoning economic change. In such an event, a society has no mechanism by which to regulate this change and is left in a state of anomie, or normlessness. Even periods of rapid economic growth are anomic, due to the fact that there is no normative restraint on human appetites. While Durkheim names crime as one of the social maladies most likely to be visited upon the anomic society, his research did not specifically focus on this outcome. Rather, Durkheim linked anomie to another form of deviance in his research: suicide (Durkheim, 1951). Briefly, Durkheim discovered that suicide rates were higher in communities that were characterized by organic versus mechanical (e.g. Catholic) solidarity. To put it succinctly, Durkheim's lays the groundwork for anomie theory in criminology by positing that the reason that crime rates are higher in organic societies is the normlessness that is left behind in the wake of modernity. Specifically, crime is linked to the scarcity of social control. Among Durkheim's chief contribution to sociology is this notion that social forces (widespread social change) have irreversible effects on individual human conduct.

Merton

Perhaps the greatest augmentation made to Durkheim's work on anomie, also stands as the seminal work in the paradigm: the works of Robert Merton (1938). Contemporary derivations of anomie and strain theory can be traced back directly to the work of Merton (1938), as well as the revisions to Merton's original position that were

made by Cohen (1955), and Cloward and Ohlin (1960). A detailed account of the Mertonian view of anomie/strain theory is provided below.

Merton offers key enhancements to both macro (anomie) and microlevel (strain) criminology by accounting for societal differences in crime rates as well as accounting for higher rates of criminal behavior among certain groups of people. Merton's version of anomie theory essentially takes on the former task by attempting to account for crime differences across societies. Merton posits that in any culture, there are certain culturally proscribed goals that all individuals are expected to value. The problem arises in a society, such as the U.S., where there is a high emphasis placed on attaining culturally-proscribed goals, absent a corresponding emphasis on the proper way by which to reach these goals. In other words, Merton asserts that there is a relatively weak emphasis placed on the legitimate means for attaining the most important goals in American society. This represents a unique contribution to theorizing in this area, and a meaningful departure from the seminal works of Durkheim (although Merton's work certainly stems from Durkheimian sociology). While Durkheim suggests that culture places limits (although sometimes unsuccessfully) on individual goals, Merton drastically blazes his own path by suggesting that culture relates to crime by mandating the *pursuit* of materialistic goals. Therefore, it is the encouragement of goal seeking, not its restraint, that is related to crime. Following this logic, nations such as the U.S. fail to adequately control goal-seeking pursuits and are therefore characterized by a state of anomie. In essence, high crime rates in nations like the United States are a function of a cultural system that encourages people to strive for monetary success without matching it with an

emphasis on the proper channels to this success. Anomie or normlessness, therefore is not an individual trait, but rather symptomatic of societies.

Merton's (1938) more individualistic, and incidentally more popular, account of criminal behavior is strain theory. Strain theory attempts to explain why certain individuals within a society have higher crime rates than do others. The central premise behind the theory is that individuals are fundamentally pressured into criminal behavior. Building upon the logic of Merton's social structure and anomie theory, Merton contends that in American culture, the goal that ascends the hierarchy is that of accumulation of wealth. Likewise, American culture more or less specifies the approved procedures by which we are to attain the approved goals. Oftentimes it is the case, according to Merton, that the culturally approved means (which emanate from values) often preclude individuals from pursuing the most technically efficient (robbing a bank) means to goal achievement (financial security). Most of the culturally approved means (e.g. hard work, education) stem from so-called "middle-class" values. A problem invariably arises when a certain segment of the population cannot attain culturally approved goals due to the fact that the culturally mandated means by which to attain those goals become blocked. This disjunction between culturally mandated goals and the culturally endorsed means of reaching those goals produces a sense of strain or unpleasantness in an individual, and places that individual in a rather precarious position. As a result of this disjunction, strained individuals are subject to less regulation and are more likely to attempt to reach goals (in particular, economic ones) using whatever means are available-including deviance. Therefore, it is Merton's contention-similar to Durkheim-that there are certain

social forces that serve to propel individuals into criminal activity. Further, it is the central contention of strain theory that these strains are not randomly distributed throughout a given society. Rather, it is the case that these strains tend to be found disproportionately among those with the highest rates of criminal activity. In other words, it is no coincidence that the highest crime rates are most commonly found among the segment of the population (the impoverished) most likely to witness blocked opportunities. For instance, oftentimes lower-class individuals are not only poorly equipped with the skills and values necessary to excel in school, but they also attend the worst schools in the most dangerous neighborhoods. These individuals are less likely to attend college and attain gainful employment. Therefore, it is the case that these individuals are disproportionately faced with heightened levels of strain.

Merton (1938) forcefully insists that not all strained individuals will turn to crime or deviance. Incidentally, most strained individuals choose conformity as their behavioral adaptation to strain. Merton (1938) offers a host of deviant behavioral adaptations to strain. The most common deviant adaptation involves an individual going outside the culturally approved means to obtain the culturally mandated goal (innovation). This is commonly represented by the common drug-dealer or street criminal, who still aspires to the goal of monetary success, but has long since given up on the proper means by which to attain that goal. Other individuals may (ritualists) continue to robotically adhere to culturally approved goals and the proper manner by which to attain these goals. Another common deviant adaptation to strain is for an individual to essentially retreat (e.g. the drug addict) from middle-class culture; giving up on all

culturally proscribed goals and means. Perhaps the most dangerous adaptation to strain for any given social order, and one that is more fully elaborated upon in future iterations of anomie/strain theory, is the individual that seeks to make disconformity with middle-class values and goals, and supplants these values and goals with a new set of norms and goals.

Extensions to Merton

While Merton clearly specifies both prosocial, as well as deviant, adaptations to strain, he fails to elaborate as to why only certain strained individuals turn to crime. To that end, key revisions were made to Merton's theory by Cohen (1955), and Cloward and Ohlin (1960). Cohen, as well as Cloward and Ohlin, posit that strained individuals must form a deviant subculture prior to resorting to criminal/delinquent activity themselves.

Cohen (1955) specifically applies Merton's strain theory to account for the delinquent adaptations to strain chosen by one group of delinquents: urban juvenile gangs. In line with Merton, Cohen (1955) asserts that delinquent activity is a function of blocked opportunities and goals. Cohen sharply diverges from Merton however, by speculating that lower class boys are not solely concerned with aspirations of financial success. Conversely, the working-class youth are more concerned with attaining the *social status* of their middle-class contemporaries. While financial success, to some degree necessary, is certainly not sufficient for members of urban gangs. Merton's most common deviant adaptation-innovation-does not work for gang members, because while they may be able to attain financial success by employing unconventional methods (e.g.

drug-dealing, theft, robbery), these methods do not necessarily result in middle-class status. Due to the futility of innovation as a means of securing middle-class respect, urban gang members employ another deviant adaptation to strain: rebellion. Cohen (1955) posits that these youths adhere to an alternative system of values and goals; one that is foreign to middle-class society (aggression, destruction of property, etc.). Due to the hostility directed at the middle-class value system, delinquent youths devise a culture that valorizes everything that middle-class America rejects. The work of Cohen extends strain theory by accounting for the proliferation and perpetuation of delinquent gangs, and by explaining why certain individuals choose certain behavioral adaptations to strain.

Cloward and Ohlin (1960) build upon Cohen's extension to Merton's strain theory by focusing on lower-class delinquent gangs. Whereas Cohen typifies gangs as embodying Merton's rebels, Cloward and Ohlin posit that there are three different forms of delinquent subcultures: the criminal, conflict, and retreatist subculture. Criminal subcultures are devoted to securing income through illegitimate means (e.g. theft, extortion), conflict subcultures are primarily trying to secure status through fighting (much like Cohen's gang members), and lastly retreatist subcultures center their activities on the consumption of illicit drugs. Much like Cohen and Merton before them, Cloward and Ohlin argue that the pressures to form and join delinquent subcultures stem from the disjunction between cultural aspirations and the availability of the legitimate means necessary to attain those aspirations. Following the logic of Merton (1938), these "pressures" disproportionately accumulate among the lower-class youth, and, in turn, lead to intense frustrations (i.e. strains) and an elevated tendency to pursue deviant

alternatives. Offering a more detailed articulation of the strain-ameliorating effects of deviant adaptations, Cloward and Ohlin (1960) indicate that two of these deviant adaptations in particular-conflict and criminal subcultures-provide the strained individual with a possible route, albeit illegal, to reach culturally-proscribed goals. Thus, in line with Cohen (1955), joining a subculture can be viewed as a possible solution to blocked goals. A key moment in the etiology of the delinquent identity is when individuals come to the realization that their failures were a result of social injustice, rather than personal inadequacies. Delinquent subcultures represent a fertile ground for such a message; offering a sympathetic ear to the strained individual and reinforcing the view that delinquency stands as a normal reaction to an abnormal social situation.

Perhaps the key advancement to strain theory offered by Cloward and Ohlin (1960) is their elaboration on the specific deviant adaptations that individuals will take when faced with strain. Specifically, the scholars contend that whether an individual will assume a pro-social or deviant adaptation to strain will hinge, in large part, on the illegitimate opportunities available to the individual. Just as the availability of legitimate opportunities goes a long way in determining whether an individual will experience blocked goals, and strain, the illegitimate opportunity structure of one's immediate environment will likely determine whether he or she chooses a deviant adaptation to strain, and furthermore, even the *type* of deviant adaptation. Briefly, when an individual comes to the conclusion that the legitimate avenues for achieving economic prosperity have become financially blocked, he or she does not necessarily have an endless assortment of illegitimate means at his or her disposal. The individual will be forced to

take what is available in their immediate environment, and if there are no illegitimate opportunity structures available, the individual, even when faced with blocked opportunities, is likely to employ a conformist behavioral adaptation. In other words, illegitimate opportunities are differentially distributed just as legitimate opportunities are, and this is the primary contribution made by Cloward and Ohlin (1960). The illegitimate opportunity structure will essentially dictate the behavioral adaptation to strain. For example, it is practically impossible for the strained individual in rural Nebraska to transform into a heroin addict, and for the same reason, juvenile delinquent gangs are found primarily in urban areas. In summation, the availability of illegitimate opportunities is just as salient of a predictor of crime rates as is the availability of legitimate opportunities (Cloward and Ohlin, 1960).

Empirical Status of Classic Anomie/Strain Theory

After its inception, classic anomie/strain theory enjoyed a period of sustained popularity throughout the criminological literature (see Clinard, 1964; Burton and Cullen, 1992). More importantly, strain theory was successfully translated into public policy, perhaps more so than any other criminological theory (Cullen and Agnew, 2006). Strain theories had a crucial impact on federal policy regarding criminal and delinquent behavior, to the extent that Cloward and Ohlin's work was the impetus for then Attorney General Robert Kennedy's Juvenile Delinquency Prevention and Control Act of 1961. The logic behind the program was to improve educational and opportunities in disadvantaged communities and to provide needed services to deserving families.

Furthermore, at its foundation, President Johnson's expansive War on Poverty program employed the logic of strain theory in an attempt to enhance the legitimate opportunities available in the country's poorest neighborhoods. However, despite these initial promising developments, anomie/strain theory fell out of favor as quickly as it rose to prominence in the world of criminology. Some scholars (Vold and Bernard, 1986) assert that the theory's popularity plummeted due to the groundswell of political and public resistance to the premise of the government providing assistance to the "undeserving" poor.

Coinciding with the diminishing support for strain theory in the political arena was the loss of popularity within the criminological community. Coupled with the lack of political and social support for the policies generated by strain theory was the dearth of empirical support validating the central tenets of the theory (see Hirschi, 1969; Kornhauser, 1978; Jensen, 1995). It necessitates mentioning that these empirical assessments of strain theory operationalized strain as the disjunction between individual aspirations and expectations; expecting, if the key propositions of strain theory were true, individuals with high aspirations but low expectations to be the most likely to engage in criminal behavior, due to the fact that these same individuals would experience the most strain. The assessments failed to garner confirmatory evidence for strain theory, and found that crime was the most likely among individuals that were low in both aspirations and expectations. More damning evidence against strain theory was collected in a series of studies that demonstrated that middle-class delinquency was nearly as common as lower-class delinquency (Tittle and Meier, 1990; Akers and Sellers, 2004). This is

particularly problematic given that the inherent logic behind strain theory is that crime is the most likely among those that are most likely to experienced block goals; the lower class.

Despite the abundance of empirical assessments that disconfirmed the key propositions of strain theory, a group of scholars began to contest the null findings of previous projects testing the utility of strain theory (Agnew, 1985, 1987; Bernard, 1986; Burton and Cullen 1994; Burton and Dunaway, 1994). Specifically, these researchers have suggested that the null findings of these scientific studies were due to a misspecification of the measurement of strain. The previous studies operationalized strain as the disjunction between aspirations and expectations, but this disjunction should not necessarily be strain-inducing. Aspirations are idealized notions that are not grounded in reality, therefore any disparity between these pipe-dreams and what one expects to occur is unlikely to generate a sense of physiological discomfort.

More recent assessments that have provided a more accurate conceptualization of classic strain have generally resulted in more supportive evidence for classic strain theory (Agnew et al., 1996; Burton and Dunaway, 1994; Burton et al. 1994). These studies offer a more rigorous measure of strain; including economic deprivation. On this note, studies have found that this particular measure of strain has significant effects on community differences in crime rates.

Reformulations of Strain Theory

Due to the previously mentioned criticisms and null findings that have been generated regarding the empirical status of classic strain theory, a number of scholars have attempted to revise and refine the theory. One of the most glaring weaknesses is strain's inability to account for middle-class deviance, and therefore, recent permutations of strain theory have explicitly attempted to account for this form of deviance with a measure of relative deprivation (see Agnew, 1992; Burton and Dunaway, 1994). Relative deprivation accounts for middle-class delinquency due to the fact that individuals in the middle-class may feel a sense of strain when comparing themselves to the economic status of others in their reference group. These individuals may, in turn, resort to delinquency to improve their position relative to that of their reference group.

An additional methodological revision to strain theory transcends economic sources of strain. In particular, adolescents seek a variety of goals, only some of which are economic. Among adolescents, it can be argued that popularity and success in the dating arena are vital sources of strain. Likewise, athletic success and parental relations can be rather strain inducing. Therefore, it is highly plausible that middle-class juveniles experience as much strain as their lower class counterparts. The aforementioned concerns coalesced in unquestionably the greatest contribution and extension of classical strain theory: Robert Agnew's (1992) general strain theory. A detailed discussion of the key propositions of general strain theory as well as tests and iterations of the theory are provided below.

General Strain Theory

As alluded to above, modern permutations of classic strain theory (Burton and Dunaway, 1994; Burton et al. 1994), while offering methodological specifications as to the way strain should be operationalized (in particular by broadening the number of valued goals beyond just economic goals) still centrally focuses on this one source of strain. In what is arguably the greatest theoretical extension in the past twenty years, Agnew (1992), in his general strain theory (GST), implies that there are additional sources of strain that transcend the failure to achieve positively valued goals. Agnew offers an increased precision regarding the key propositions embedded within strain theory. Regarding positively valued goals, Agnew notes that it is the disjunction between expectations and actual outcomes, as well as the disparity between fair/just outcomes and actual outcomes that are strain-inducing (Agnew 1992; Broidy and Agnew 1997).

While Agnew still focuses on the failure to achieve positively valued goals as a vital source of strain, he extends strain theory by suggesting additional sources of strain that primarily revolve around negative relations with others, as well as negative life events. In particular, by negative relations with others, Agnew is referring to “relationships in which others are not treating the individual as he or she would like to be treated” (Agnew, 1992:50).

Agnew outlines three different categories of negative relations: (1) relations where others prevent or threaten to prevent the individual from acquiring positively valued goals (e.g. financial success, social status); (2) relations in which others remove or threaten to remove positively valued stimuli; and (3) relations in which others present

noxious stimuli. Therefore, Agnew posits that strain may occur in a *variety* of situations aside from the failure to reach the goals of popularity or financial success. Strain may also occur when an individual experiences the death or divorce of his parents (removal of valued stimuli), and also when an individual experiences verbal or physical abuse (presentation of noxious stimuli). Strain scholars (see Hay 2003) note that this focus on negative relations represents a unique contribution to theorizing in the area of crime and delinquency, as most popular paradigms within criminology focus on the criminogenic effects of *positive* relations-or relationships that the individual evaluates as acceptable. Most notably, social learning theory (Akers, 1998) identifies positive relationships with criminal peers to be the primary factor in determining criminal behavior. This focus on negative relationship offers a key extension to the extant criminological literature.

These strain-inducing negative relations with others are likely to generate a variety of negative emotions, or negative affect. In particular, Agnew (1992) proposes that strain may lead individuals to feel anxious, nervous, depressed, or angry. It logically follows that these negative emotions place pressure on the individual to correct the situation; in some cases through delinquency. Specifically, anger-more so than any other negative emotion-plays a central role in producing delinquent adaptations to strain. Anger tends to increase the level of perceived injury, creating a need for exacting revenge, while concurrently lowering inhibition. It follows that delinquency actually serves to ameliorate strain-induced negative emotions. Deviant responses to strain may be escapist, retaliatory, or instrumental. For instance, it might be quite pleasurable for an individual to respond to insults with a physical assault (retaliatory). Likewise, illicit drug

use may function as an escape (escapist) from the negative emotions generated by strain. Finally, some may respond to blocked economic goals by engaging in property or white-collar crime (instrumental). In summation, from this perspective strain is a necessary, but not a sufficient cause of delinquency (Agnew, 1992; Paternoster and Mazzerolle, 1994; Mazzerolle and Piquero, 1998).

As with most strain theories, Agnew (1992) instructs that the strain/crime relationship is not entirely deterministic, and not all strained individuals turn to criminal adaptations. This may partially be attributed to the fact that only certain negative emotions elicit delinquent coping mechanisms, and there are only certain types of strain that lead to this particular negative emotion. Agnew contends that strain fluctuates in its effect on delinquency according to its magnitude (the degree of stress inflicted), recency (more recent strains are particularly harmful), duration (perpetual strain is more damaging), and its clustering (to the extent that strain accumulates, it has more criminogenic effects). Therefore, only certain types of strain will induce the negative emotions necessary to evoke a potential criminal response.

Agnew suggests that strain will periodically elicit a non-delinquent adaptation; in which an individual may reinterpret the experienced strain as being innocuous. Agnew additionally presents a number of individual coping resources that have the potential of shielding the strain-induced individual from adapting a delinquent coping strategy (Agnew 1992). These include coping skills, self-efficacy, and self-esteem. Additionally, there may be structural barriers (lack of illegitimate opportunity structures) that essentially preclude an individual from delinquent coping mechanisms. Likewise,

conventional social support, social bonds, and even religiosity will generally reduce the likelihood that a strained individual will resort to crime. Taking the aforementioned concerns into consideration, it becomes quite clear that strain leads to delinquency only when it cannot be effectively managed and when constraints to delinquent adaptations are weak or nonexistent.

Before delving into a discussion on key theoretical developments, including Agnew's specification of the types of strain most commonly linked to delinquency, a discussion of the empirical status of GST is in order.

Empirical Assessments of GST

As mentioned previously, GST has received a considerable amount of empirical attention over the past 15 years, to the extent where some scholars imply that it has ascended the hierarchy within criminology (Hoffman and Miller, 1998). While most empirical assessments have yielded favorable results for GST, supporting the central propositions of the theory (Agnew and White, 1992; Agnew et al. 2002; Baron, 2004; Broidy, 2001; Broidy and Agnew, 1997; Brezina, 1998; Jang, 2006; Capowich, Mazerolle, and Piquero, 2001; Jang and Johnson, 2003, 2005; Jang and Lyons, 2007; Mazerolle and Piquero, 1997, 1998; Mazerolle, Burton, Cullen, Evans, and Payne, 2000; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004; Robbers, 2004; Slocum, Simpson, and Smith, 2005; Wareham, Cochran, Dembo, and Sellers, 2005), there have been a few notable exceptions (Asetline, Gore, and Gordon, 2000).

In what amounted to a preliminary test of GST, Agnew (1985) observed that negative relationships with teachers and parents, along with a sense of alienation from school, were each associated with the negative affect of anger, which was subsequently significantly related to school deviance, aggression, and serious delinquency. In a subsequent longitudinal study, Agnew (1989) garnered more empirical support between the relationship between these noxious stimuli and later delinquency. Agnew and White (1992) conducted the first explicit empirical evaluation of GST. Employing data from the Rutgers Health and Human Development Project, they developed eight constituent indicators of strain, as well as multiple measures of relevant theoretical variables. These indicators accurately reflected Agnew's ardent desire to focus specifically on *negative relations* with others as the primary basis of GST. The scholars found that four of the eight measures of strain were significantly linked to both prior delinquency and prior drug use, net of theoretical controls. They additionally found that a composite measure of strain was as strongly related to prior delinquency as was a measure of social bonding. An interesting caveat introduced in this research was the idea that strain's impact on delinquency could be indirect, and therefore moderated by other factors such as delinquent friends and self-efficacy (conditioning effects). The authors corroborate this hypothesis; the strain/delinquency relationship was stronger when delinquent friends were high and self-efficacy was low (Agnew and White, 1992). While the cross-sectional findings were overall supportive of GST, the longitudinal findings were equivocal at best. In the longitudinal data, the composite measure of strain was significantly related to subsequent delinquency, but not subsequent drug use. Moreover,

neither of the two relevant interaction terms (strain * self-efficacy, strain * delinquent peers) were significant predictors of delinquency. While it will be discussed in greater detail later, it warrants mentioning at this juncture that Agnew posits that a contemporaneous measure of strain might be preferable when attempting to reveal significant relationships with delinquency due to the recency effect (Agnew 1992). In other words, one possible explanation for the mixed support with the longitudinal sample is due to the fact that a strain experienced at time one may be inconsequential when predicting criminal behavior three years in the future, as the residue of that strain have likely subsided in that time lapse.

Paternoster and Mazerolle (1994) offered, up to that date, what was the most comprehensive and rigorous test of GST. The scholars specifically attempted to replicate and extend the research of Agnew and White (1992), by incorporating multiple sources of general strain, and by capturing variations in the magnitude and duration of said strains. Moreover, Paternoster and Mazerolle used a number of conditioning variables, including a measure of delinquent peers, self-control, self-efficacy, morality, and social support. The authors employ the use of longitudinal data from waves 1 and 2 of the National Youth Survey. Paternoster and Mazerolle (1994) find, congruent with GST, that those individuals that live in deteriorating neighborhoods, have problems fitting in with teachers and peers, have experienced negative life events in the past year, and have bad relationships with their parents were significantly more likely to commit delinquent acts, net of measures of differential association and social control. Inconsistent with the key propositions of GST was the finding that living in a deteriorated neighborhood failed to

significantly interact with the amount of time living in such a neighborhood (duration) when predicting delinquency. Contrary to expectations was the finding that only one of the interaction terms (self-efficacy* composite measure of strain) exerted a significant effect on delinquency, but it was not in the expected direction, indicating that strain has a more robust effect on delinquency at *high* levels of self-efficacy. Paternoster and Mazerole (1994) find evidence of strain interacting with other theoretical variables as strained individuals are likely to experience diminished social bonds and an increase in delinquent peers. A glaring omission, acknowledged by the authors, is that there are no measures to test for the mediating effects of negative affect. Similarly, Hoffman and Miller (1998) assess the potential interactions of strain with a previously untested individual conditioning factor: self-esteem. Results from a series of Structural Equation Models extracted from a longitudinal sample of youths suggest that *none* of the relevant conditioning effects were significant. In other words, the strain/delinquency relationship remained constant across differing levels of self-esteem, self-efficacy, and delinquent peers. Surprisingly, strain was found to have a stronger impact on those individuals with *no* delinquent peers, thereby suggesting that for individuals already embedded in a delinquent network, increases or decreases in strain are inconsequential when concerning delinquent behavior.

Another landmark study in the etiology of GST comes from Brezina (1996), who attempts to explicitly test one of the core postulations of strain theory: the utility of delinquency as a coping mechanism for strain. As suggested by Agnew (1992), delinquency has the potential of providing individuals with the means to either avoid

strain directly, or to alleviate the negative emotions generated by strain. This implies that delinquency potentially conditions the impact of strain on negative affect, to the extent that strain will induce negative emotions when participation in delinquency is *low*. This view of delinquency as a form of problem-solving behavior stands in strict contradiction to the views of delinquency that regard such behavior as irrational. Using cross-sectional and longitudinal data from the Youth in Transition survey, Brezina (1996) garners support for the postulation that strain is positively associated with various negative affective states; including anger, resentment, depression and anxiety. Furthermore, a multiplicative interaction term (strain * delinquency) was found to reduce, although not mediate, the effects of strain on negative affect, offering credence to the assumption of delinquency as a means of reducing strain-induced negative affect. Specifically, at low levels of delinquency (two standard deviation below its mean), strain has a potent effect on negative affect, particularly anger. This finding makes intuitive sense considering that one of the key propositions of GST is that strain will be related to delinquency when strain induces feelings of anger. It appears that strain is significantly related to negative affect, and to a lesser extent, adolescents who engage in delinquency are somewhat less likely to experience the negative emotional consequences (particularly anger) of strain (Brezina 1996).

In a more contemporary assessment of the core propositions of GST, Broidy (2001) fleshes out the mechanisms involved in the strain/crime relationship by first suggesting that strain-induced anger will result in a greater likelihood of illegitimate outcomes, whereas other negative emotions (anxiety, fear, depression) will not. Results

garnered from a sample of college students offer mixed support for the hypotheses. Particularly, the effects of strain on negative emotions, aside from anger, appear to be limited to the positive effect that the presentation of noxious stimuli and the removal of positive stimuli has on negative emotions. Conversely, all three measures of strain are positively related to anger, albeit in an unexpected manner. While stress (removal of positively valued stimuli/presentation of noxious stimuli) and unfair outcomes are positively related to anger, results suggest that the failure to achieve one's goals is *negatively* related to anger. Broidy offers a plausible explanation (Agnew makes the same argument in his original formulation of GST) for this unusual finding as individuals may realize that some of their goals are unattainable, thereby rarely generating angry emotions. These results indicate that although strain influences negative emotions, the relationship appears to be particularly convoluted. Results corroborate Broidy's hypotheses in that non-angry negative emotions lead to legitimate coping strategies, while strain-induced anger is significantly unrelated to legitimate coping, and positively related to *illegitimate coping*. Therefore, specific forms of negative affect are linked to specific adaptations to strain.

While the vast majority of tests of GST have garnered favorable results, there is at least one notable exception emanating from research conducted by Asetline et al (2000), who disconfirmed many of GST's central propositions. While the authors did find two (stressful life events, family conflict) of three measures to be positively related to adolescent deviance (peer conflict was found to be irrelevant), intervening negative affective states (i.e. anger) were only related to violent delinquency. Moreover, evidence

failed to support the moderation argument, as social and personal resources failed to condition the relationship among strain, negative emotions and delinquency (Aseltine et al. 2000).

The research discussed in the preceding paragraphs offer nearly uniform support for GST within the criminological community. That being said, more contemporary research in the GST tradition has attempted to offer greater methodological and conceptual specification.

Theoretical Reformulation: Types of Strain Most Related to Crime

As previously mentioned, Agnew (1992, 2001) vehemently asserts that some strains are more criminogenic than others. Here, Agnew is addressing a glaring weakness in his original formulation of GST in that he essentially identifies innumerable sources of strain (within each domain) without necessarily specifying which strains are the most important in determining criminal coping responses. To this end, Agnew offers a major reassessment of GST by clearly articulating the definition of strain and by specifying the types of strain most related to crime.

Agnew begins his reformulation by clearly distinguishing between objective and subjective strains. Briefly, objective strains are those that are evaluated by group members as being strain-inducing. Conversely, subjective strains are so evaluated by particular individuals. Agnew notes that most of the empirical tests of GST have operationalized strain in objective terms, and he suggests the need for more subjective measures of the construct. Agnew defends this recommendation by noting that many

objective “strains” (e.g. divorce, losing a job) are not necessarily subjective strains, as evaluated by the individual, and this problem in conceptualization can ostensibly account for some of the null findings in empirical assessments of GST.

Agnew’s most pertinent extension of GST lies in his articulation of the four conditions in which strain is most strongly related to delinquency. Strain will likely lead to crime when said strains: (1) are viewed as unjust; (2) are seen as being high in magnitude; (3) are associated with low social control, and (4) create pressure or incentives for criminal coping. Agnew (2001) posits that unjust treatment is related to crime, primarily because such treatment engenders anger as it causes individuals to ignore information that may potentially resolve the situation. Moreover, individuals are likely to view a situation as unjust if individuals believe that the unjust treatment is voluntary and intentional. Unjust treatment specifically violates rules of justice; whether it be distributive (undeserved), procedural (unfair process), interactional (aggressive), or retributive (violation of strongly held norms) in nature. Additionally, strain that is seen as high in magnitude is conducive to criminal coping. Factors influencing perceptions of magnitude include duration (of both current strains and future strains), frequency (how often do the strains occur), centrality (does it impact goals, identities central to the identity of the individual) and recency (more recent strains are more conducive to criminal adaptations than distant strains). Thirdly, strains that are coupled with various manifestations of low social control (inconsistent parental discipline, secondary employment, parental rejection, homelessness) lead to a greater likelihood that an individual will resort to criminal adaptations to the strain. On the other hand, strains that

are associated with high social control (strains associated with working professional jobs) are less likely to lead to criminal adaptations. Intuitively, those individuals that pursue conventional success goals generally have moderately high levels of social control. Lastly, strain that creates pressure to engage in criminal coping is linked to criminal behavior. Borrowing from social learning theory (Akers, 1998), certain types of strain (e.g. physical victimization) invariably are associated with exposure to others that model criminal coping strategies.

Based on this theoretical specification, Agnew (2001) offers great advances in GST, in terms of the manner in which strain is to be defined and measured. Initially, Agnew (1992) asserted that whether an individual assumes a delinquent adaptation to strain is contingent on the individual's characteristics (i.e. coping skills, social supports, etc.). With this extension, Agnew now adds the characteristics of the *strains being experienced* to the discussion on determining whether a strain-induced individual will choose crime. Therefore, strains that result from accidents and threaten goals not salient to one's identity will be weakly related to crime. Agnew contends that this is why the failure to achieve educational and occupational goals is generally *not* related to delinquency. Conversely, Agnew suggests that verbal and physical assaults by parents, teachers, spouses, and peers do meet the aforementioned criteria and are therefore hypothesized to have a strong relationship to crime.

A number of tests have specifically assessed the ability of physical victimization (as introduced by Agnew, 2001) to serve as a crime-inducing source of strain (Agnew, 2002; Hutchinson-Wallace et al. 2005). Agnew (2002) was among the first to

scientifically evaluate the strain-inducing capacities of physical victimization. Here, Agnew offers yet another extension to GST by suggesting that even strains not directly experienced (vicarious and anticipated strains) by the individual can evoke negative emotions (i.e. anger) and are related to delinquency. In other words, physical victimizations experienced by others around the individual (close friends, family) can be criminogenic. Anticipated strain alludes to the individual's prediction that her current strain will continue into the future or that new strains will arise. Agnew vigilantly points out that actual experiences with strain are more consequential, in relation to crime, than anticipated or vicarious strain. On a related note, anticipated strains are most likely to affect crime/delinquency when the perceived probability of occurrence is high, when they pose an immediate threat, and when the magnitude is high. Using longitudinal data from a nationally representative sample of juveniles, Agnew finds confirmatory evidence linking time-one experienced victimization (11-item scale) to time-two delinquency, independent of theoretical controls. Specifically, individuals experiencing physical victimization at time one were more likely to engage in delinquency at time two. Qualified support was found for the impact of vicarious victimization on delinquency, with the victimization of family and friends being the only statistically significant vicarious strain measure. The two other measures of vicarious victimization (school and neighborhood violence), along with anticipated strain, were unrelated to delinquency. Agnew finds experienced and vicarious physical victimization are stronger predictors of delinquency than all other variables (including delinquent friends and family/teacher attachment), save prior delinquency. Results not only indicate the importance of physical

victimization as a salient source of strain, but also advocate the need for including vicarious and anticipated sources of strains when conducting research on GST.

Hay and Evans (2003), in concert with Agnew (2001, 2002), suggest that physical victimization will oftentimes be perceived as unjust and traumatic, and thereby likely to elicit negative emotions such as anger. Furthermore, the effects of victimization on delinquency should be at least partially mediated by anger. Lastly, the researchers contend that if GST is to be supported, the effects of victimization will hinge on conditioning factors. In particular, strain should only have a pertinent impact on delinquency when the conditioning factors of social control (as operationalized by parental attachment) and self-control are low. Using data from the National Survey of Children, Hay and Evans find that while physical victimization (being hit with a hand or fist, being hit with an object, etc.) is a significant, positive predictor of delinquent behavior, this relationship is fully mediated by anger. Regarding the potential conditioning effects of self and social control, results indicate that only the interaction between self-control and strain were significantly related to delinquency. It therefore appears that physical victimization, especially in conjunction with low self-control, is significantly linked to anger and subsequent delinquent coping (Hay and Evans 2006).

Hutchinson-Wallace, Patchin and May (2005) attempt to resolve previous ambiguities regarding the relationship between peer victimization and delinquency. Specifically, while Agnew (2002) found physical peer victimization to be a significant predictor of delinquency, Agnew et al (2002) later found *verbal* peer victimization not to be a significant predictor of delinquency. The guiding principle is that peer victimization

is likely to lead to the negative emotional responses of anger and frustration, and in turn, delinquency. The researchers' purpose was twofold: (1) to assess the plausibility of both verbal and physical victimization as a criminogenic source of strain: and (2) to test the notion that domain specific strains (school-generated) will be related to domain specific (school-related) delinquency. In other words, that strain that is experienced at school should elicit school-related deviance. Results find that those students who had been victimized (either verbally or physically) were significantly more likely to become angry and frustrated, and subsequently were more likely to participate in school delinquency. Consistent with expectations, peer victimization was the strongest predictor of school delinquency. Running counter to the central tenets of GST was the finding that even when accounting for strain, anger and frustration each exert independent effects on delinquency; thereby disconfirming the mediation argument. The main contribution centered on the findings that both violent and non-violent victimization are robust predictors of delinquency and should be taken into consideration in future research (Hutchinson-Wallace et al. 2005).

Additional Sources of Strain

Recent permutations of GST have attempted to uncover new sources of strain, previously neglected in the literature (Eitle 2002, Eitle and Turner 2003; Baron, 2004, 2006). Eitle (2002), and Eitle and Turner (2003) offer perceived gender and racial discrimination as pertinent sources of strain. Eitle (2002) suggests that perceived gender discrimination should serve as a potent predictor of female deviance. Eitle tested this

hypothesis by using two measures of strain: recent stressful events and perceived discrimination. The multi-dimensional perceived discrimination measure attempted to assess the extent to which individuals experienced major (being denied a job) and day-to-day (being treated with less courtesy) discrimination that could be attributed to their gender. Findings indicated that women who were involved in crime and drug use were significantly more likely to report experiencing major acts of gender and non-gender discrimination, as well as a number of recent stressful life events. Contrary to expectations was the finding that so-called day-to-day gender discrimination failed to exert a significant impact on female crime or female drug use. Eitle (2002) offers the explanation that females exposed to day-to-day gender discrimination likely have an arsenal of legitimate coping mechanisms that help alleviate such strain, but when faced with major gender-based discrimination, these coping mechanisms fall short of negating the crime-causing impact of strain. In a later study, Eitle and Turner (2003) attempt to uncover yet another salient source of strain, by linking racial discrimination to race-specific crime rates. The researchers propose that not only do African Americans disproportionately commit crime due to differential exposure to strain, but there is also a chance that members of minority groups experience strain in a different manner, which predisposes them to criminal adaptations. The authors additionally extend GST by offering more comprehensive estimates of both recent stressful events and chronic strains affiliated with ascribed statuses. In particular, this contemporary operationalization of strain includes measures of recent stressful life events, as well as two previously neglected sources of strain: lifetime exposure to potentially traumatic events

(experienced or vicarious serious injury, unwanted pregnancy, etc.) and exposure to enduring strains (i.e. wants to leave job but cannot). The authors hypothesize that racial differences in crime will be a function of either differential exposure to strain, differential access to legitimate coping mechanisms, or differential vulnerability to strain. Using survey data gathered from young adults in south Florida, the authors find, independent of controls, all three stressors are positive, significant predictors of crime across all races. More importantly, the findings indicate that racial differences in criminal involvement are almost entirely contingent on exposure to strain. In other words, if ethnic/racial groups were to be exposed to similar levels of strain throughout their lifetime, all racial/ethnic differences in crime rates would disappear. Eitle and Turner (2003) additionally fail to find support for the differential vulnerability argument; thereby implying that racial differences in crime are a product of differential exposure, rather than differential vulnerability, to strain. In other words, blacks are no more likely to commit a crime when exposed to stress than are whites. Whereas Eitle's previous study illustrated the importance of gender discrimination as a source of strain, here Eitle and Turner (2003) elucidate the importance of race as a vital source of strain.

Baron (2004, 2006) in a series of studies, examines the ability of myriad forms of strain to predict criminal activity among a sample of a particularly at-risk population: homeless street youth (aged 24 and under). Additionally, Baron examines how these previously neglected sources of strain (economic deprivation in particular) may be conditioned by a series of variables; including self-efficacy, self-esteem, external attributions, deviant attitudes, deviant peers, and anger. Baron chooses homelessness as a

particularly criminogenic type of strain due to the fact that it brings into question a range of identities, values, and needs, and is likely to be perceived as high in magnitude. Likewise, it follows that homelessness is ostensibly viewed as unjust, and will subsequently be linked to diminished social control as people's contact with conventional society will invariably be reduced. Contrary to expectations, Baron (2004) found only two sources of strain to be significantly related to anger: emotional abuse and violent victimization, but the vast majority of strain measures were significantly related to total crime committed. Furthermore, homelessness, monetary dissatisfaction, and property victimization were found to be independent predictors of crime. These findings from Baron suggest that objective measures of poverty are unable to capture the sense of injustice required to generate an angry response, and the homeless are more likely to interpret physical and mental abuse as anger-provoking. Another interesting nuance to Baron's (2004) initial findings is that certain strains (abuse, homelessness, relative deprivation, criminal victimization) appear to be more generalizable across offense types while others are more offense-specific. In a related study, Baron (2006) identifies homelessness as a crucial source of economic strain for both males and females. Employing a sample of young Canadian street youth, Baron finds that both monetary dissatisfaction and homelessness are significant predictors of both male and female property crime. It must be mentioned that homelessness had a particularly strong effect on female property crime, while relative deprivation had a more potent effect on male property crime (Baron, 2006).

Another theoretical development in the GST literature is the juxtaposition of GST with both classic criminological theories (Hoffman and Ireland, 2004 and also emerging criminological theories (Hoffman and Cerbone, 1999; Slocum et al. 2005).

Drawing from developmental and life course criminology, Hoffman and Cerbone (1999) assert that the effect of strain on delinquency is cumulative, and individuals experiencing persistent strains are especially likely to resort to delinquency. To put it succinctly, these individuals are essentially redirected into a different life-course trajectory-one that is particularly conducive to the escalation of delinquent behavior. Consistent with GST, it is the authors' contention that adolescents are particularly vulnerable to the persistent strains due to their heightened sensitivity to negative relations with others, and the fact that adolescents lack the proper mechanisms to handle strain in an efficacious manner. The authors test their hypotheses by employing a four-year, cumulative measure of strain. The hierarchical growth curve models employed in the study reveal that the persistent occurrence of stressful life events leads to a concomitant increase in delinquent behavior, net all controls. Specifically, an increase of one negative life event was associated with an increase in delinquent activities of 1.13 (Hoffman and Cerbone, 1999). Slocum et al. (2005), following the lead of Hoffman and Cerbone (1999) use GST as framework for understanding changes in criminal propensity through the life course, primarily in relation to short-term changes in adult offending. Additionally, Slocum et al. (2005) examine the different dimensions of strain-recent composite strain, duration, clustering, and accumulation-and how they contribute to the explanation of criminal offending. A key finding of the Slocum et al. (2005) study was

that drug use does not mediate the strain/violence link. In other words, and in contrast to expectations, women are still more likely to be violent during months when they experience all three forms of strain, regardless of drug use. However, drug use did appear to mediate the relationship between negative life events and property crime. A cursory glance at this finding might initially imply that strained women employ drug use as a potential coping mechanism, and the money needed to sustain this coping behavior is generally acquired through illegitimate (though nonviolent) means, but more detailed qualitative analyses indicated that this was not the case and drug use actually led to more strain.

The relationship between the individual dimensions of strain and crime is more convoluted. In particular, all four dimensions of strain do not independently contribute to predictions of escalated violence. Conversely, only clustering and duration were found to be *consistent* independent predictors of crime, and they were the only dimensions to be significantly linked to violent offending (duration, clustering, and accumulation were independently related to drug offending). In other words, violence is most likely to occur when strain is chronic (long-lasting) or clustered within a short time span, and these two elements are therefore central components in measuring strain (Slocum et al. 2005).

In an intriguing study pitting classic strain theory against GST, Hoffman and Ireland (2004) test a central proposition of Cloward and Ohlin's (1960) seminal work: the criminogenic effects of strain will be contingent on differential access to illegitimate opportunity structures. Strained individuals will therefore only resort to delinquency when confronted with the availability of socially derived illegitimate opportunity

structures. Specifically social opportunity structures are represented as the proportion of similarly situated youth within an area, the values and norms of an immediate area, the tolerance for deviance, and the availability of legitimate coping resources. These social opportunity structures specifically included aggregated school-level delinquency scores based on individual-level responses to delinquency items. The authors garner qualified support for the hypotheses. Consistent with expectations, classical (disjunction between aspirations and expectations) and contemporary (stressful life events) measures of strain were found to be positively related to delinquency; thereby confirming the salience of both past and present conceptualizations of strain. In stark contrast to the hypotheses derived from classic strain theory, both stress and strain were positively associated with delinquency irrespective of differential access to the four measures of illegitimate opportunity structures (Hoffman and Ireland, 2004). This finding largely suggests that GST is given more explanatory credence when juxtaposed against classical conceptualizations of strain theory. In summation, the preceding studies point to the ability of GST to interact with classical and contemporary theories of criminal behavior.

Situational Versus Trait-Based Anger

A recent collection of studies in the GST literature have attempted to delineate the types of anger that are most significantly related to criminal coping strategies. This is logical given the fact that anger is hypothesized to have the most proximate effects on crime. Capowich, Mazerolle and Piquero's (2001) effort represents one of the first empirical tests of GST that exclusively hones in on situational anger (the type of anger

that arises in reaction to a particular series of circumstances), which is ostensibly most closely linked to the central tenets of GST. The authors presented a sample of college students with a series of fictional vignettes representing intentions to commit crime. Strain was represented with a myriad of situational stressors; ranging from negative life events (family had serious financial problems), to the removal of positively valued stimuli (immediate family member died, moved to a new school). As expected, strain was significantly linked to intentions to fight, but was reduced to statistical insignificance when anger was added to the nested model. As might be expected, negative emotions aside from anger were related to nonviolent crimes; such as intentions to shoplift and DUI. Again, this finding underscores the importance of anger in predicting violent behavioral adaptations to strain, and other negative emotions in predicting nonviolent responses. In a follow-up study to Capowich et al. (2001), Mazerolle, Piquero, and Capowich (2003) examine if trait-based or situational anger is more pertinent in the GST/crime relationship. Early studies of GST predominantly employed the use of a trait-based measure of anger. This conceptualization strategy is potentially problematic due to the fact that operationalizing anger as an underlying, constant feature of an individual's personality obscures the unique effects that certain stressors have on anger, and by extension, crime. The scholars point out that GST essentially predicts that individuals that are faced with strain will experience anger, which in turn may be ameliorated by the commission of a criminal act. If anger is conceptualized as being trait-based, this will invariably lead to a possible tautology, as angry people will be found more likely to respond to strain with anger. The authors contend that a situational or *state-based*

measure of anger is more in line with the central tenets of GST, and previous studies have suffered from this methodological oversight. Operating under this logic, the authors assess whether the relationships between strain, anger, and crime are contingent on what measure of anger is used. In a similar vein, Mazerolle et al. (2003) attempt to ascertain whether individuals with high levels of underlying anger (trait anger) have an increased likelihood of experiencing strain (negative life events, inequitable experiences), experiencing strain-generated anger, and respond with deviance. A sample of college students was presented with vignettes regarding their intentions to commit shoplifting and assault. To represent situational anger, respondents were asked to respond to a series of vignettes. Conversely, trait-based or dispositional anger was measured by an anger expression scale used in previous empirical assessments of GST (Agnew et al. 2002) that differentiates between suppressed anger (Anger In) and expressed anger (Anger Out). Ostensibly, “anger out” is more consistent with anger as an underlying personality trait, and is therefore more pertinent in this study. Consistent with relevant hypotheses, the authors found that those individuals that reported a greater number of stressful events were also more likely to indicate intentions to fight. While situational anger, in the fully specified model, exerted a positive, significant effect on intentions to fight, neither strain nor negative emotions were related to intentions to fight. This hints at the salience of situational anger within GST. Situational anger, in the fully nested model, failed to attain a significant relationship with intentions to shoplift and intentions to DUI. This finding is expected due to the fact that negative emotions (e.g. anxiety, depression) are more likely to be linked with alcohol use than is situational anger. Somewhat unexpectedly, social

support failed to condition *any* of the relationships between anger, strain, and intentions to commit crime. These studies provide vital assessments of GST given the role that anger has as a proximate source of criminal adaptations to strain. The aforementioned research generally privileges *situational over trait-based* conceptualizations of anger, which is of paramount consequence given the role anger (Capowich et al. 2001; Mazerolle et al. 2003) has as a proximate source measures of anger. A very detailed discussion regarding the ability of GST to serve as a general theory is provided below.

General Contention

It warrants mentioning that Agnew's version of strain theory is a general theory that portends to account for all forms of delinquent and analogous behaviors, as well as the relationship between demographic variables and crime (Agnew 1992). GST stands alongside other general or integrated theories in this claim (social learning, self-control). Therefore, if GST is indeed a general theory, it should explain both serious and minor forms of crime/delinquency. Furthermore, GST should be able to explain gender and racial disparities in criminal offending. Lastly, given that strains are in fact subjectively evaluated, there are essentially innumerable stressful life events that can potentially be linked to deviance, and if GST is to have general effects these myriad sources of strain should be linked to both aggressive and non-aggressive deviant acts (see Aseltine et al. 2000). The vast majority of empirical studies that have tested this proposition have essentially validated GST (Aseltine, Broidy and Agnew, 1997; Hay, 2003; Sharp et al. 2003; Piquero and Sealock, 2004; Jang, 2007; Morash and Moon, 2007; Arter, 2008).

Gendered Analyses

Accounting for the “Gap” in Criminal Offending

If GST has general tendencies, then we should be able to employ the use of the theory to answer two perplexing questions that have plagued the criminological literature: (1) “How can the gender gap in criminal offending be explained?”; and (2) “Do the same theories that account for male criminal behavior work in the same manner for females?”. (Broidy and Agnew, 1997). Broidy and Agnew, in what is undoubtedly the seminal piece of scholarship in this area, (albeit conceptual) attempt to answer these aforementioned questions by demarcating the links between gender, strain, and criminal behavior. The idea is that a broader version of strain theory, one that transcends the traditional goals/means disjunction, should be able to account for female criminality, as well as the aforementioned gender gap. The scholars contend that GST possesses the capacity to answer question one by positing that there are gender differences in the types of strain experienced and reactions to said strain, that effectively serve to generate gender differences in crime rates. In a similar vein, Broidy and Agnew conjecture that there are unique sources of female strain that may more efficaciously account for female crime.

It is forwarded that GST has the capacity to explain the gender gap in four ways. First, it is argued that males experience more strains than do females. Secondly, males are disproportionately likely to experience crime-generating strains. Next, the emotional response to strain on the part of males is different, and consequently more conducive to

crime. Lastly, although males and females both experience anger, males are presumably more likely to respond to strain-induced anger with crime.

Regarding the first assumption, Broidy and Agnew cite a litany of studies (see Barnett and Baruch 1987; Mirowsky and Ross 1995; Gove and Herb 1974) that demonstrate that *females* actually experience more strains than males, and subsequently rate these strains as being more stressful than do males. Based on this evidence, GST cannot account for the higher rates of male criminality by suggesting that they experience more strain.

While there appears to be little support for the idea that males commit more crime because they are subject to more strain, there does seem to be some plausibility in the argument that there are vital gender differences in the *types* of strain (e.g. financial strain, physical victimization, etc.) experienced, and this may bridge the gender gap in criminal offending. For instance, this logic argues that males are more likely to emphasize monetary success, and when the means to attain this goal become blocked, males are disproportionately more likely (due to their disproportionate emphasis on this goal) to resort to illegitimate means (white-collar crime) to secure this goal. As far as the gender gap in violent offending is concerned, males disproportionately experience interpersonal conflict and physical victimization. As a result, males experience a heightened level of strain and are more prone to resort to deviant tactics to alleviate the unpleasant feelings.

Another logical explanation to the gender gap in criminal offending is that there are gender-specific emotional responses to strain, with males being more likely to experience the types of negative affect most conducive to crime (Broidy and Agnew

1997). GST strongly suggests that the emotional responses of anger and frustration are particularly criminogenic, and while females appear to experience similar (or even higher) levels of anger as do males, female anger is more likely to be accompanied by less crime-inducing, forms of negative affect; such as depression and fear (see Campbell 1993; Gove 1978; Mirowsky and Ross 1995). Women are more apt to blame themselves when faced with strain, and this serves to dilute the criminogenic effects of strain-induced anger (Broidy and Agnew 1997). From this vantage point, responses to strain may be conditioned by gender; with males being more likely to externalize their anger by aggressing toward others, and females being more likely to internalize their anger and respond with self-directed deviance. Not only does the preceding explanation account for the gender gap in criminal offending, it may account for gendered offending, or in other words, why males are more likely to commit violent offenses while females are more likely to take self-destructive (e.g. suicide, drug use) forms of deviant adaptations.

Lastly, Broidy and Agnew indicate that males may be more prone to respond to strain and anger with serious forms of delinquency due to the fact that there are crucial gender differences in conditioning effects. In particular, females are generally more subject to social control, more likely to have elevated levels of social support, and are less likely to be high in self-efficacy and self-esteem. These conditioning effects may serve to shield females from deviant adaptations to strain, even when experiencing elevated levels of strain and the forms of negative affect (anger) most conducive to crime.

As a general theory, GST should also be a sound predictor of the types of deviance most likely to be perpetrated by females. Broidy and Agnew (1997) utilize

Agnew's three broad sources of strain to illuminate uniquely female responses to those strains. Regarding the failure to achieve positively valued goals, the majority of females are primarily concerned with the acquisition of intimate ties with others, and when the achievement of these particular goals become problematic, it is likely to induce a strong sense of strain in females (but not for males considering the blocking of this goal would be viewed as rather innocuous). As females have become more involved in the financial sector, the blockage of financial goals (which can be witnessed in most pink-collar occupations) can result in strain-inducing outcomes (e.g. the feminization of poverty). Likewise, while in pursuit of interpersonal and financial goals, females have a general proclivity to desire to be treated in an equitable manner. The aforementioned gender discrimination at the occupational level, as well as various forms of abuse experienced in interpersonal relationships, may lead to egregious violations of the principle of equity.

Concerning the loss of positively valued stimuli, females have traditionally been precluded from entrance into what have been termed traditional "male" activities (e.g. sports, politics), and there is certainly a cumulative nature to this strain, given that this process earnestly begins in adolescence (Broidy and Agnew 1997). Females additionally experience abundant noxious stimuli (verbal and physical abuse) that revolve around their interpersonal relationships.

In the wake of Broidy and Agnew's (1997) influential contribution to the generality of GST (keep in mind that there was no sufficient data available to test these hypotheses), a plethora of scientific studies have attempted to operationalize and test the key propositions of this theoretical extension to GST (Hay, 2003; Hoffman and Cebone

1997; Hoffman and Su, 1997; Jang, 2007; Kaufman, 2009; Mazerolle, 1998; Piquero and Sealock, 2004; Robbers, 2004; Sharp et al. 2001; Sharp et al. 2004). The majority of these studies (see Hoffman and Cebone, 1997; Mazerolle, 1998; Hoffman and Su, 1999 for exceptions) garner confirmatory evidence as to GST's ability to account for both female delinquency as well as the gender gap in crime.

Broidy (2001) was among the first to find that while strain-generated anger is equally likely among males and females, other negative emotional reactions are more likely among females. Furthermore, females were found to be significantly more likely to engage in legitimate coping strategies. These findings suggest males and females experience similar levels of strain, but respond with different emotions and coping strategies (Broidy, 2001). Hay (2003) offers a more extensive test of the key assumptions advanced by Broidy and Agnew (1997) by using GST as a mechanism to account for gendered offending and the disproportionate delinquent activity of males. Hay tests a number of hypotheses, including the notion that family strains are among the most consequential for adolescents (particularly young males), and their crime-inducing capacity potentially renders the gender/delinquency relationship spurious. Borrowing again from Broidy and Agnew (1997) Hay posits that although females ostensibly experience similar levels of strain as do males, female anger is more likely to be accompanied with a myriad of negative emotions (i.e. depression, fear) which potentially dilute the need for immediate corrective action that anger engenders, thereby making females more likely to internalize strain and less likely to employ the use of violent coping mechanism. In his final hypothesis, Hay proposes that males will be more likely

to respond to anger *and* strain with delinquency, due to the fact that males have fewer non-delinquent coping mechanisms at their disposal (e.g. less social control, less social support, more delinquent peers). Results garnered from a sample of adolescents indicated that four of five measures of family strain were significantly related to delinquency, with two of these measures (parental rejection and physical discipline) being the most robust predictors of delinquency in the fully specified model. Consequently, males were found to be more likely to experience this form of strain, thereby making them more likely to experience the type of strain that was most conducive to delinquency in this sample (Hay, 2003). Also evidence was found that substantiated a key tenet in Broidy and Agnew's argument: while males and females experience similar levels of anger, females experience appreciably higher amounts of guilt than do males. And, incidentally, guilt was found to share an *inverse* relationship with delinquency. Gauging from these findings, the gender gap in criminal offending, as first postulated by Broidy and Agnew (1997) can partially be explained by the fact that not only do males experience higher levels of the *type* of strain most significantly linked to delinquency, but also that guilt significantly attenuates the criminogenic effects of strain, and females are significantly more likely to experience strain-induced guilt (Hay, 2003).

Piquero and Sealock (2004) offer a unique study in this area in the fact that it was among the first empirical attempts to offer a comprehensive examination of strain, negative emotions, and coping mechanisms across gender within a sample of delinquents. A unique contribution made to this branch of the GST literature is the supposition that there will be relevant gender differences in coping resources; with males more likely to

employ physical coping responses to strain and females more likely to resort to cognitive, emotional, and social coping resources. Results, consistent with GST, indicated no significant gender differences in the amount of strain experienced. Males, as expected, demonstrated higher levels of both physical and cognitive coping resources than did females. Consequently, and contrary to the main premises of GST is the finding that strain exerted a significant, positive effect on delinquency even with the inclusion of anger; especially for males. It appears that, at least for this study, the criminogenic properties of abuse are strong enough to operate irrespective of levels of negative emotions. Likewise, anger is significantly linked to male aggression but is only marginally significant for female aggression, again supporting Broidy and Agnew (1997). Depression was not significantly linked to male or female interpersonal aggression. Perhaps the most surprising finding emanating from Piquero and Sealock's study was that for males, the availability of social coping resources actually exacerbated the delinquent activity of strained individuals. The authors contend that the mixed findings of this study, if nothing else, underscore the need for further research in this area for purposes of disentangling how different types of strain, coping strategies, and negative affect are experienced across gender. Robbers (2004) advances this focus on gender differences in conditioning effects, implying that the conditioning capacity of social support may operate differently across gender, having more of a crime-inhibiting impact for females. It intuitively follows that due to the importance placed on interpersonal relationships by females, social support will be a salient moderator for strain, particularly among females. Quasi-longitudinal results from the sixth wave of the National Youth Survey lent

qualified support for the relevant hypotheses. All three sources of strain were potent predictors of delinquency. The interaction term for social support and strain (only for failure to achieve goals) was found to be significant, thereby indicating that when strain is high social support has a negative impact on delinquency (interference effect). However, when the sample was disaggregated by gender, the strain/social support interaction was only significant for *females*, indicating that when females are strained, (unable to achieve positively valued goals) and have high levels of social support, they are less likely to engage in delinquent behavior. Paradoxically, the *direct* effects of social support were significant for males, but not for females. Therefore, it appears that social support provides a robust buffer to only some sources of strain for females. Furthermore, failure to achieve positively valued goals (economic goals were omitted) was a significant predictor of female, but not male, delinquency. Robbers (2004) contends that the failure to achieve positively valued interpersonal goals may be of little consequence to males, who are more likely to prioritize more proximate, economic goals. The noteworthy conclusions to be drawn from this research include the fact that the pathway to delinquency appears to operate in a slightly different manner according to one's gender, and moreover, the development of social support networks appears to be particularly significant inhibitors of certain forms of strain-induced delinquency among females.

Morash and Moon (2007) delineate gender differences in the strain/delinquency relationship by using data from a sample of South Korean high-school students. The researchers introduced a new measure of strain- punishment inflicted upon students by

teachers- which was presumed to be an important source of strain in Korea. Because of the gendered emotional responses to strain-most notably outlined by Agnew and Brezina (1997)-it was the contention of the researchers that negative responses by teachers would elicit an aggressive reaction for boys and would force females to resort to more inward-directed responses to strain; such as alcohol use, truancy, and vagrancy. Results indicated that males were more likely than females to experience both emotional and physical abuse by teachers, which consequently was significantly linked to violent behavior. Teacher abuse was the most robust predictor of aggression (when coupled with association with delinquent friends), and may explain in part the gender gap in criminal offending. Specifically, males are more likely to experience this particular form of strain, and are therefore more likely to engage in violence, especially when this strain is in conjunction with association with delinquent peers.

Baron (2006) simultaneously tests for the gendered effects of strain on delinquency and introduces homelessness and relative deprivation as emerging new sources of strain that should be viewed as being high in magnitude. As first articulated by Broidy and Agnew (2006), Baron suggests that there exists some ambiguity as to whether males and females experience different types of socioeconomic strain, and in turn, if these strains are linked to their criminal behavior. Aside from homelessness, Baron examines a host of previously neglected economic strains, including monetary dissatisfaction and economic deprivation, for the purposes of determining if there are gender differences in the types of economic strain experienced, and moreover, if there are gender differences in how these strains affect more serious crime. Secondly, it is

suggested that females that experience this form of strain will be more likely to resort to crime. Lastly, Baron explores the crime-inhibiting, or crime amplifying, effects of gender differences in conditioning factors (self-esteem, self-efficacy, external attributions). Results derived from a sample of street youth suggest that homelessness and monetary satisfaction are each independently related to male and female property offending. Incidentally, homelessness exerted a stronger effect on female criminal offending while relative deprivation had a stronger impact on male violent offending. An intriguing finding that emerged from Baron's study was that homelessness had a greater impact on male property offending when matched with low self-esteem and high levels of deviant attitudes. Also for males, the relationship between relative deprivation and property crime is increased when coupled with external attributions and deviant peers. Conversely, for females monetary dissatisfaction and relative deprivation had a stronger impact on violent crime when coupled with attitudes more supportive of crime, and in the case of monetary dissatisfaction when they surrounded themselves with deviant peers. Baron's (2006) study is among the first to suggest that there are pertinent gender differences in the way strain interacts with conditioning effects.

Jang (2007) offers one of the most comprehensive tests of Broidy and Agnew's (1997) thesis by specifically assessing the three ways in which Broidy and Agnew offer GST as an explanation of gender-differences in crime. Jang posits that African American women will be more prone to experience what he terms "female" strains, (interpersonal, health-related, and gender role strain) which in part accounts for male's higher proclivity to engage in criminal behavior, given that the aforementioned strains are presumably less

likely to lead to anger, and therefore crime. Conversely, the “male” strains (financial strain, work-related strain, racial discrimination, and criminal victimization) are assumed to be anger-inducing and therefore more likely to lead to criminal behavior, due to the fact that anger predominantly engenders other-directed emotions (externalizing strain). Perhaps most germane to the Jang (2007) study was the contention that conditioning factors (religiosity, self-esteem, self-efficacy, social support) will enhance the positive effects of legitimate, self-directed coping responses to strain, particularly for females, while simultaneously reducing the criminogenic effects of other-directed coping behaviors. Using a sample of adult African Americans, (a strength of the study given the centrality of both religiosity and strain in the lives of African Americans) results affirmed that African American women were indeed more likely to experience “female strains” and less likely to experience “male strains”, with one minor exception: females were more likely to report financial strain. Running counter to expectations was the finding that while two female strains exerted stronger influences on negative emotions other than anger, (depression, anxiety) male strains were not more likely to lead to other-directed emotions like anger. This finding runs in strict contradiction to the Brody and Agnew hypothesis, which essentially argues that men’s greater proclivity for engaging in crime is due to the fact that men disproportionately experience anger-inducing strain. Results corroborated the hypothesis that other-directed emotions (i.e. anger) have stronger effects on other-directed coping behaviors, such as violence. Moreover, the self-directed emotions of depression and anxiety were more likely to lead to self-directed non-deviant and legitimate coping behaviors (e.g. prayer). Consequently, and in line with

expectations, religiosity was more likely to diminish the positive effects of anger and anxiety/depression on illegitimate coping behavior *among females*. This leads to the inevitable conclusion that, for African Americans, the crime-inhibiting effects of religiosity are more robust for women than men. Other conditioning factors (self efficacy, social support, and self esteem) also exerted stronger crime-buffering effects for women than men. The preceding studies all point to the notion that GST is an adequate framework for accounting for gender differences in crime and delinquency. To put it succinctly, it appears that the primary reason why males are disproportionately represented in crime statistics stems from the fact that not only do males disproportionately experience the types of strain most strongly correlated with crime/delinquency (Broidy, 2001; Jang, 2007; Morash and Moon, 2007), but they also are more likely to experience, in isolation, the type of negative emotion (anger) that is most strongly linked to delinquency (Piquero and Sealock, 2004). Lastly, and perhaps most importantly, due to the lack of conventional coping resources and conditioning effects, strain and anger each exert a stronger push into illegitimate coping mechanisms for males (Hay, 2003; Piquero and Sealock, 2004; Robbers, 2004; Jang, 2007).

Accounting for Gendered Offending

There have also been a handful of studies that attempt to tap into the ability of GST to explain *female* forms of deviance (Kaufman, 2009; Sharp, Terling-Watt, Atkins, Gilliam, and Sanders 2001; Sharp, Brewster, and RedHawk-Love, 2004). These studies criticize previous tests of GST for focusing exclusively on deviant coping strategies that

are primarily linked to males. This provides little to no insight as to the correlates of female deviance. Sharp, Terling-Watt, Atkins, Gilliam, and Sanders (2001) explicitly test this assumption by employing GST as a mechanism of accounting for a uniquely female, and relatively ignored, form of deviance; purging behavior. This test assesses the ability of GST to operate in a general manner by attempting to account for a behavior analogous to crime among a population that, until recently, has received little empirical attention (females). Aside from chronic and cumulative strains that are commonly found in the literature, the authors use gender-based strains (being unattractive) that will presumably exert a stronger deviance-inducing effect on females. The authors incisively note that the strain/deviance relationship operates through the intervening variable of negative affect, and therein lies the explanation to gender differences in crime. Using a sample of 96 female college students, the authors find that only the failure to achieve goals measure attained statistical significance when predicting purging behavior. Likewise, failure to achieve goals, parental hostility, and feelings of unattractiveness were all significantly and positively related to depression. Interestingly, when purging behavior was regressed upon anger and depression (net of controls) only depression reached statistical significance. This finding is somewhat surprising given that when viewed separately, both variables exerted positive effects on purging. Sharp et al. (2001) account for this finding by suggesting an interaction between anger and depression. It was found that anger has a positive, significant effect on purging *only when levels of depression are high*. This suggests that *female* deviance is contingent on other forms of negative affect, a finding that should not come as much of a surprise given that anger is particularly

conducive to aggressive responses toward others. Furthermore, the results extend the paradigm by noting that different *negative affective states* will be related to different types of deviance. Sharp et al. (2004) continue this focus on uniquely female deviant responses to strain by observing the gendered pathways into eating disorders. Using data from a sample of college students, the authors run separate regression models for both males and females. Consequently, negative life events were found to be related to both anger and depression among males, but only anger in females, thereby suggesting that negative life events may be more prominent in predicting *female* deviance, given anger's central role in evoking delinquent adaptations to strain. Interestingly, higher levels of self-efficacy were *positively* associated with anger in males, indicating that males who feel in control of their lives correspondingly feel liberated to express strain-induced anger. Consistent with GST, (most notably Broidy 2001; and Broidy and Agnew 1997) negative emotional responses (other than anger) were found to be *inversely* related to *female* delinquent behavior, regardless of the level of anger. Incidentally, females were found to be significantly more likely to report non-anger emotions, although this relationship was insignificant for females reporting high levels of social support. This means that the strains experienced by females (in the absence of pertinent conditioning effects like social support) are more likely to induce non-angry negative emotions, which in turn, accounts for their reduced likelihood to respond to strain with delinquency, but also accounts for their *greater likelihood* to respond to strain with other deviant adaptations (eating disorders). The preceding studies demonstrate the utility of GST in accounting for traditionally female types of non-criminal, but deviant, activity.

In a related study testing for the general effects of GST, Preston (2006) juxtaposes self-control, social learning, and GST in their capacity to explain marijuana use. This pertains to the current discussion on gender due to the fact that groups that face heightened levels of strain (minorities, females) are presumed to be more likely to employ deviant coping strategies due to the relative paucity of coping strategies at their disposal. Marijuana is advanced as an *emotional* coping strategy to alleviate the physiological discomfort evoked by economic strains. This is a unique contribution to the extant GST literature due to the fact that the overwhelming majority of studies focus on behavioral (criminal) coping mechanisms. While Preston finds males and minority group members to be significantly more likely to be chronic users of marijuana, results also suggest that economic strains were found to have no impact on chronic marijuana use for the full sample. Results did confirm the hypothesis that strain will have a stronger effect on the marijuana use of members of minority groups and females (Preston, 2006). The results-especially the fact that the strain measures were more robust predictors of marijuana use for females and minorities-support one of the central tenets of GST: it appears that minorities and females have fewer adaptive strategies for dealing with strain and are thereby more likely to resort to drug use as a coping mechanism.

In a recent gendered examination of GST, Kaufman (2009) attempted to account for male and female deviance, by tracing the gendered pathways to gendered deviant outcomes using data from Waves I and II of the National Longitudinal Study of Adolescent Health. In logistic models, Kaufman finds physical victimization and the suicidal attempt of a peer or relative to be independent predictors of weekly drinking,

individual suicide ideation; a finding largely inconsistent with the central tenets of GST. Moreover, OLS regression analyses revealed violent victimization remained a significant predictor of Wave II violence after inclusion of negative affective measures. Regarding the gendered effects of GST, Kaufman finds support for the “gendering” of types of strain and subsequently experienced negative emotions; with males being significantly more likely to experience physical victimization and anger, while females experienced depression at higher levels. Conversely, it appears that results relating to the “gendered” pathways to gender-specific deviant outcomes, is varied. While there is support to the notion that the pathways to deviant outcomes more commonly associated with males (i.e. weekly drinking, violence) are in fact gendered, the same cannot be said of the more traditionally female forms of deviance (i.e. running away, suicide ideation). In other words, it appears that physical victimization (an disproportionately “male” strain) has a stronger impact on violence (a traditionally “male” outcome). Kaufman’s (2009) work, while garnering only mixed results for the gendered pathways of GST, further documents the salience of serious strain (victimization, parental/peer suicide attempts) in influencing both male and female deviant behaviors through the quasi-mediating variable of negative affect.

More General Theories

A handful of studies in the GST tradition have attempted to specifically assess the claim of generality, inherent in GST, as well as any other “general” theory (Aseltine et al. 2000; Bao, Haas, and Pi, 2004; De Costler and Kort-Butler, 1996; Maxwell, 2001; Walls,

Chaple, and Johnson 2006; Arter, 2008). The studies accomplish this by applying GST to myriad forms of delinquent and analogous behaviors (De Costler and Kort-Butler, 2006; Jang and Lyons, 2007; Arter, 2008; Walls et al. 2006), applying the principles of GST to previously under-researched populations (Arter, 2008) and cross-national samples (Bao et al. 2004; Walls et al. 2006; Morash and Moon, 2007).

The most rigorous of these aforementioned empirical tests comes from Aselsine et al. (2000) who employs longitudinal data for the purposes of testing the generality of GST. The researchers found two of three measures of strain (i.e. negative life events, parental conflict) to be significantly, but modestly, related to three forms of deviance (aggression, property offenses, and drug use); thereby offering qualified support for the generality of GST. De Costler and Kort-Butler (2006) explicitly assess the general nature of GST by determining if a given source of strain (family, school) evokes a domain-specific response (family or school delinquency). The scholars refer to this tendency as theoretical determinacy due to the fact that a given motivational conditions determine specific deviant responses. The opposite condition, known as theoretical indeterminacy, exists when a given motivational condition can produce a myriad of deviant outcomes. If GST is truly a “general” theory, then it should closely follow the pattern of indeterminacy, in which specific strains can lead to vastly different responses. The researchers produce qualified support for this argument, and advocate an intermediate position, known as “soft determinism”. This essentially describes a condition in which stress from one area will “cross over” lead to deviance in another area. De Costler and Kort-Butler (2006) imply that these crossover effects are primarily the result of stress

spillover. For instance, arguments that occur at home can potentially lead to arguments at work. Therefore, the domain inconsistency that was witnessed in this particular study was due primarily to stress spillover and is not necessarily indicative of GST truly functioning as a general theory.

Other studies in this area have attempted to apply GST to diverse populations and acts analogous to crime (Maxwell, 2001; Morash and Moon, 2007). Researchers in this tradition contend that empirical studies of GST that have been conducted using American samples ignores issues of generalizability that are paramount in establishing a given theory's contention of generality (Morash and Moon, 2007). Moreover, data extracted from a non-American population can ostensibly reveal if whether strains that are relevant to delinquency are contingent on cultural context. To this end, the Maxwell (2007) piece contributes to the literature testing the general contention of GST by observing how strain-in this case familial strain-holds up as a predictor of both self-report and teacher predictions of serious and non-serious forms of delinquency among a sample of Filipino children. The notion-previously unexplored in the GST literature-is that family strain (i.e. experiencing parent-to-child violence, witnessing inter-parental violence) are particularly persistent and enduring sources of strain that will likely have a salient impact on all forms of delinquent behavior. Maxwell (2001) found that witnessing interparental violence significantly predicted all forms of antisocial behavior even when including social bonding and differential association measures. However, and contrary to expectations, physical violence inflicted by parents on children was not a significant predictor of delinquency. Maxwell accounts for this unanticipated finding by indicating

that while parents have an unprecedented level of control over their children (which potentially accounts for the null finding of parent/child violence) parental discord has particular deleterious consequences on children. Maxwell (2001) also finds an interaction between strain, social control, and differential association. Individuals that witness interparental violence are subsequently more likely to have weakened social bonds, and are more likely to strengthen their bonds with peers. By extension, these individuals will be more likely to engage in delinquent acts due to diminished bonds and an increase in delinquent peers (Maxwell, 2007). Bao et al. (2004) apply the central tenets of GST to an international sample of adolescents (China). Results revealed that negative parental and teacher relations exerted a direct, positive effect on school, property, and violent delinquency. Conversely, negative relations with peers only significantly impacted property offenses, potentially illuminating the salient role played by parents and teachers in the People's Republic of China. Furthermore, the results of the study hint at the broad applicability of GST, holding up to rigorous empirical assessments in a vastly different society. In a related study, Morash and Moon (2007) offer an assessment of GST using a sample of Korean youth. Aside from the most commonly employed measurements of strain (negative life events, parental abuse, financial strain) Morash and Moon employ a measure of strain that takes into consideration emotional and physical punishment by teachers. Such behavior is considered to be a particularly salient source of strain, given the centrality of education in Korean culture. The scholars found a substantial link between teacher punishment and delinquency; particularly on the part of males. Again, these results speak to the broad applicability of GST; not only accounting

for the gender gap in delinquency, but predicting adolescent delinquency among an international population (Morash and Moon, 2007). In yet another related study, Walls et al. (2007) find support for the general contention of GST by significantly linking strain (family conflict/disruption, negative school experiences, discrimination) to an analogous behavior, suicide ideation, among a sample of Native American Youth. The authors determine that certain strains have a more appreciable effect among certain populations. For instance, the family plays a vital role among certain cultures (Native American), and therefore strain in this area will be consequential in eliciting deviant coping mechanisms. Likewise, the heightened level of discrimination faced by American Indians will have particularly strong effects on crime/deviance.

A small number of strain theories have attempted to assess the “general: ability of GST by applying it to behaviors analogous to crime (Jang and Lyons 2006; Arter, 2008). A brief description of these studies is provided in the following paragraphs.

Jang and Lyons (2006) ascertain the link between strain, negative emotions (both inner and outer-directed) and an overlooked deviant coping mechanism-withdrawing behavior-among a sample of African Americans. The authors also examine the possible crime-buffering capacity of social support. Findings reveal that anger is an inconsequential predictor of withdrawal behavior, while incidentally other inner-directed negative emotions (e.g. depression, anxiety) were found to illicit significant effects on this unique adaptation to strain. This offers support for the contention that outer-directed emotions have a stronger impact on outer-directed behaviors, and inner-directed emotions have a stronger impact on inner-directed behaviors (e.g. withdrawal). Moreover, the

scholars find qualified evidence suggesting that the social support/withdrawing behavior relationship is mediated in part by negative emotions. In other words, social support inhibits withdrawal by decreasing negative emotional responses to strain (and perhaps by increasing *positive* emotional responses). It could be that this finding is partially due to the fact that African Americans, in general, have a reservoir of social support at their disposal; including family, friends, and religious networks. Even strained African Americans, in turn, are less likely to have negative emotions when these support networks are present.

A noticeable liability in current examinations of GST is their over-reliance on adolescent samples. It is entirely plausible that the GST/crime relationship operates in a different manner for adolescents than adults. In order to function as a general theory of crime, the theoretical propositions of GST should be applicable to varied populations (e.g. adults as well as adolescents). To this end, there is a current stream of research that explicitly offers this methodological refinement (Arter 2008; Ostrowsky and Messner, 2005; Mazerolle and Piquero, 1998; Piquero and Sealock, 2000, 2004). In what was possibly the first examination of GST using a non-adolescent sample (college students), Mazerolle and Piquero (1998) garnered partial support for GST. In particular, GST measures were significantly linked to intentions to fight among their sample of college students, but not to intentions to DUI or shoplift. Additionally, the intervening variable of anger was found to mediate only the strain/intentions to fight measure (Mazerolle and Piquero, 1998). In a later study, Ostrowsky and Messner (2005) attempted to illuminate the covariates of offending among a sample of 20-29 year-old participants in

wave 6 of the National Youth Survey. The authors posited that both traditional (i.e. the disjunction between expectations and achievements; blocked opportunities) and contemporary (i.e. noxious stimuli) measures of strain would indirectly affect both violent and property crime through the intervening mechanism of depression, independent of both classical criminological theories (i.e. social bonding, differential association) and prior offending. In short, the authors find evidence generally in support of GST; in particular GST's applicability in predicting both violent and property offending-net of other criminological theories-among a previously neglected population (i.e. young adults). Regarding traditional measures of strain, the blocked opportunities index was found to be a significant correlate of only property offending while the disjunction between expectations and achievements was found to be a significant predictor of only violent offending. Turning to the contemporary measurement of strain, results consistently affirmed GST as a significant predictor of property and violent offending, with physical victimization being the most robust covariate in the model. Intriguingly, while none of the traditional indicators of strain were found to be significantly linked to depression, all three measures of GST were strong predictors of depression. Consequently, the depression measure-while failing to mediate the GST/crime relationship-was found to be significantly linked to both violent and property offending. While the evidence is generally supportive of GST's "general" claim, the authors temper this exuberance by pointing out that no measure of the central mediating mechanism within the GST framework-anger-is included in the NYS survey. Moreover, there was a lack of any measures of potential conditioning factors from the analyses, and

this study essentially represents a conservative test of GST (Ostrowsky and Messner, 2005). Lastly, it was found that traditional and general strain theories appear to be more robust predictors of *violent* crime, and by this calculation, GST fails to be a truly general theory of crime.

Arter (2008) augments GST by applying work-induced strains to various forms of deviance in an adult population. Arter (2008) observes a unique form of strain (working undercover) faced by a unique population (police officers) and attempts to link it various forms of professional misconduct (failure to follow proper police protocol, rude behavior toward citizens, excessive drinking). Police officers may use these maladaptive strategies to alleviate stress evoked by their undercover assignments. Undercover police work is construed to be very emotionally taxing, and these officers are expected to experience exacerbated levels of stress. Consistent with expectations, Arter found that those officers who had never been on undercover assignments reported experiencing the least amount of stress and, more importantly, reported the least amount of deviant acts. On the contrary, those officers that were *currently* serving in an undercover assignment reported the highest amount of stress and consequently the greatest number of deviant acts, by a considerable margin. To explain these findings Arter (2008) posits that undercover assignments become core components of a given officer's self identity, and as articulated by Agnew, strains that affect core activities and identities are especially likely to lead to deviant coping responses. It follows then that undercover officers face more strain in their roles, and this strain is particularly criminogenic due to the central position this role occupies in one's identity. It was found that the potential deviance-inducing effects of

undercover strain were largely mitigated by officers that were high in social support. Overall, the results garnered from this study provide unequivocal support to the generality of GST by applying a somewhat disregarded source of strain (occupational strain) to the broader concept of deviance in an adult population.

Despite a preponderance of evidence supporting the generality of GST, there has been one study in the extant literature that has refuted this claim. Aseltine et al. (2000) using a three-wave panel study of adolescents failed to substantiate the generality claims of GST. Specifically, while the researchers found wave 2 strain-induced anger to be a positive predictor of wave-three delinquency, this relationship held only for aggression; none of the strain or anger measures were significantly related to non-aggressive acts of delinquency or marijuana use.

Conditioning Factors

Agnew, in his original statement on GST, suggests that the relationship between strain and delinquency is certainly not deterministic. There are factors to take into consideration such as types of strain experienced, negative emotions, and also potential internal and external conditioning factors (Agnew, 1992). Piquero and Sealock (2004) provide an excellent articulation of the role of conditioning effects by describing the differences between mediating and conditioning effects in the strain/crime relationship. Briefly, while negative emotions mediate the strain/crime relationship, conditioning variables (e.g. self-efficacy, social support, social control) interact with strain to condition strain's effect on crime. Some of these conditioning factors (self-esteem, self-

efficacy, social support) are presumed to protect the individual by attenuating the criminogenic effects of strain, while others (deviant attitudes, deviant peers, low self-control) exacerbate the strain-induced negative emotions, in effect increasing the likelihood of a criminal response (Paternoster and Mazerolle, 1994; Agnew, 2001).

Individual Conditioning Effects

The vast majority of studies in the strain tradition have focused on internal conditioning factors, such as deviant attitudes, self-esteem, and self-efficacy (Agnew and White, 1992; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004; Hoffman and Miller, 1999; see Aseltine et al. 2000 for evidence to the contrary). While these internal conditioning factors presumably ameliorate the negative emotions experienced generated by strain, at least two studies in the extant GST literature confirm that self-efficacy and self-esteem actually function to aggravate strain-induced negative emotions, and increase the likelihood of a criminal response (Agnew and White, 1992; Paternoster and Mazerolle, 1994; Baron, 2004). Baron (2004), in an analysis of the relationship between serious economic strains (e.g. homelessness) and crime finds that strained (emotional abuse) individuals with high self-esteem were *more likely* to be involved in crime. Furthermore, individuals that suffered violent victimization reported being involved in more crime when this victimization was paired with high levels of self-efficacy. These two related findings in essence refute the notion that individual resources such as self-efficacy and self-esteem serve as an inhibitor to criminal adaptations to strain. This

potentially suggests that the individual high in self-efficacy has a reduced level of fear of apprehension and believes that he or she can control outcomes.

There are some forms of individual conditioning effects that serve to exacerbate the strain/crime link. Agnew et al. (2002) identifies certain personality variables (low restraint, high negative emotionality) as being particularly important conditioning variables to strain. The individual that is high in negative emotionality is much more likely to experience strains as aversive, and to subsequently externalize these strains. The individual that is low in constraint is similar to the individual low in self-control, in that she is unable to delay immediate gratification, is insensitive to the needs of others, and is easily frustrated. Therefore, individuals high in negative emotionality and low in constraint are ostensibly more susceptible to strain-induced negative emotions, and are less inclined to respond in a non-criminal fashion (Agnew et al. 2002). As expected, Agnew et al. (2002) found a positive interaction between a composite measure of strain and negative emotionality/low constraint in relation to their effect on delinquency. When negative emotionality is high and constraint is low, the effect of strain on delinquency greatly increases in magnitude. Another common illegitimate individual conditioning effect is deviant attitudes. Obviously, when an individual is high in deviant attitudes, there is an increased likelihood that the strained individual will turn to a delinquent coping mechanism.

External Conditioning Effects

Social support has emerged in the GST literature as a potential external conditioning effect to strain. It intuitively follows that even strained individuals that have a strong social support network will presumably be shielded from adopting criminal responses to strain (Capowich et al. 2001; Jang and Lyons, 2007). The conditioning effect of social support actually shares an indirect relationship with crime, through the intervening variable of negative emotions. Strained individuals that are high in social support will be less likely to experience negative affect, especially the types of negative affect that are likely to evoke pressure for corrective action. In turn, individuals with strong social support networks are buffered from experiencing criminogenic negative emotions. Research has garnered a good deal of support for the crime-inhibiting effects of social support (most notably Jang and Lyons, 2007). Capowich, Mazerolle, and Piquero (2001) forward social support as an external conditioning effect that may condition the anger/crime relationship. The notion is that while GST is a social-psychological theory of criminal behavior, the immediate social environment will be of consequence in determining how individuals respond to strain. Capowich et al. proceed to identify two constituent types of social support: private and parochial networks. It logically follows that private networks of social support include intimate relationships with family and friends, while parochial networks consist of personal and professional acquaintances that emanate from routine activities (i.e. work, school, etc.). The notion is that both forms of social support (ecological and individual) reduce the likelihood that an individual will choose a deviant adaptation to strain by ameliorating the criminogenic

effects of strain. Jang and Lyons (2007) found social support to be key in reducing strain-induced negative affect, and thereby preventing a unique deviant adaptation to strain (withdrawal). Likewise, Hay and Evans (2003) find social bonding to be a key conditioning factor of delinquency.

Of particular interest to this study is the potential crime-inhibiting capacity of conditioning effects; particularly external conditioning effects. While social control, deviant peers, and social support have been offered as crucial and empirically validated (see Hoffman and Miller 1998 for results to the contrary) external conditioning effects, one that is less ubiquitous in the GST literature is religiosity (for key exceptions see Jang and Johnson 2003;). There is a vast empirical literature that has studied the relationship between religion and crime; with the overwhelming majority of those studies finding religiosity to share a strong, inverse relationship with crime (see Pratt and Cullen 2000 for a meta-analysis on the topic). There have been a select few studies that have tested the ability of religiosity to condition the strain/negative emotions/crime relationship, and they have generally received solid empirical support. That being said, there are a few gaps in the extant literature (non-representative samples) that the current study will specifically address. The current study will examine the relationship between GST, negative affect, external conditioning factors, and delinquency among a nationally representative sample of adolescents. Before turning to a discussion of religiosity as an external conditioning factor, a detailed review of the religiosity/crime literature is provided.

Religiosity and Crime

Before delving into a detailed discussion regarding the empirical relationship between religiosity and delinquency, there is a need to differentiate the concept religiosity from religion. The concept religion is generally intended to signify individual identification with a particular faith. From this perspective, most individuals identify themselves as belonging to some particular organized religion or denomination (e.g. Catholic, Methodist, etc.). That being said, the research literature is very consistent in pointing out that it is not the identification with a particular religion that is consequential in deterring abhorrent behavior. Conversely, scholars generally employ the term religiosity when discussing a potential relationship between religion and a litany of behavioral outcomes. The term “religiosity” denotes the level of one’s religious convictions, and transcends identification with a particular denomination or affiliation, to a representation of individual involvement in religion (Johnson, De Li, Larson, and McCullough, 2000). Therefore, religiosity signifies individual participation in religious activities, the importance that religion plays in one’s daily life (i.e. extent to which religious values have become internalized) and the presence of fundamentalist beliefs.

Empirical Status of Religiosity and Crime

It can be said that the overwhelming majority of the empirical literature has issued support for the contention that religiosity and crime share a negative relationship; with individuals high in religiosity being less likely to engage in various forms of criminal/delinquent behavior (Albrecht, Chadwick, and Alcorn 1977; Baier and Wright,

2001; Burkett and White, 1974; Burkett, 1993; Cochran 1988; Cochran 1989; Cochran and Akers 1989; Evans et al. 1995; Evens et al. 1996; Harris, 2003; Johnson et al. 2000; Peek, Curry, and Chalfant, 1985; Sloane and Potvin 1986; Stack and Kposowa, 2006; Stark, Doyle, and Kent, 1982; Stylianou, 2004; Tittle and Welch 1983). While, in general, the religiosity/crime literature concludes that there is an inverse relationship between religiosity and crime, the potency of this association has been found to be contingent on a number of factors (see Baier and Wright, 2001; Benda and Corwyn, 1997; Burkett and White, 1974; Elifson, Peterson and Hadaway, 1983; Stark et al. 1982 for examples). The relationship between religiosity and crime most importantly hinges on the type of deviance considered, as well as the operationalization of religiosity. While a further elaboration of those contingencies will be provided later, the following paragraphs represent a discussion of some of key historical studies that have examined the religiosity/crime relationship.

Most empirical studies in the area of religiosity/crime can be traced back to the watershed study of Hirschi and Stark (1969). Hirschi and Stark sparked a renewed interest in the relationship between religiosity and crime with their “hellfire thesis”. The researchers were interested in whether the supernatural threats of an eternity of hellfire, and/or the tendency for religiosity to encourage conforming behaviors from its members, would suffice in deterring individuals from delinquent activity. Much to the authors’ dismay, data collected from a high school sample failed to find an association between delinquent behavior and religiosity. Those who frequently attended church services were just as likely as those that did not attend to engage in self-reported delinquent acts.

Specifically, Hirschi and Stark posited that church attendance was inconsequential to delinquency because “it fails to instill in its members love for their neighbors” (Hirschi and Stark 1969: 212). It is important to note that this study was criticized for measuring religiosity as a unidimensional variable. A fundamental liability in the study was the operationalization of religiosity as a unidimensional measure of church attendance, as this potentially neglects key dimensions of the construct (e.g. internalized beliefs, and fundamentalist beliefs) that may serve as inhibitors of criminal behavior.

Contrary to the controversial findings of Hirschi and Stark, (1969) other studies have found at least moderate support for a negative relationship between religiosity and crime (Albrecht et al. 1977; Cochran 1988; Cochran 1989; Cochran and Akers 1989; Evans et al. 1995; Evens et al. 1996; Johnson et al. 2000; Peek, Curry, and Chalfant, 1985; Sloane and Potvin 1986; Tittle and Welch 1983), leading some to go as far as to suggest that the religiosity/crime relationship is now an empirical generalization (Cochran 1988). Tittle and Welch (1983) found that only 10 of 65 published accounts of the religiosity/crime relationship failed to find a significant inverse relationship between the two variables. Higgins and Albrecht, (1977) employing data gathered from a sample of high school students, found a moderately strong negative relationship between frequency of church attendance and serious acts of delinquency. The authors introduced a causal structure linking religiosity to delinquency. In particular, religiosity should be positively related to respect for the juvenile court system, which in turn is negatively related to delinquency. The researchers found a positive relationship between church

attendance and respect for the juvenile court system, and a negative relationship between respect for the juvenile court system and delinquency (Higgins and Albrecht 1977).

In a very captivating extension to the core religiosity/crime framework, Peek et al. (1985) contemplate a potential deviance-amplification process, in which there is a positive relationship between religiosity and delinquency over time. The idea is that religiosity is a fluid construct that oscillates over time, and is therefore subject to increases and decreases through the life course. Consequently, decreases in religiosity will invariably be linked to a higher proclivity to engage in delinquent behavior. Individuals that were initially committed to religiosity, eschewing all forms of criminal and analogous behaviors, subsequently become more likely to engage in criminal behavior as this crime-inhibiting force begins to dissipate. Incidentally, those individuals that are “losing their religion” will be experiencing an increase in criminality at the same time that others begin to desist from delinquency, invariably leading to a spike in delinquent activity relative to their peers. Findings extracted from the Youth in Transition survey found confirmatory evidence for the deterrence hypothesis, as time 1 religiosity was inversely related to time 1 and time 2 serious delinquency. More importantly, results also illuminated a significant amplification effect over time. In particular, 1966 religiosity was found to be a *significant, positive* predictor of 1969 delinquency. This relationship was found to be a function of religious fluidity, as stable religiosity between the three years was still found to retard delinquency, while diminished religiosity was found to at least partially account for the uniform gain in delinquent behavior (Peek et al. 1985).

Measurement Issues

As previously alluded to, one of the problems with early studies of religiosity and crime was the use of church attendance as the sole measure of religiosity (see Johnson et al. 2000). This narrow definition neglects dimensions of religiosity, such as religious salience (the influence of religion on daily life) and religious fundamentalism (i.e. fear of God's punishments), that are purported to have an effect on crime (see Evans et al. 1996). By employing the use of multiple-item indicators of the construct, researchers are able to differentiate the devoutly religious from those that attend religious service primarily because of parental obedience (Johnson, Jang, Larson, and De Li, 2000).

In relation to the preceding concerns, Elifson et al. (1983) offered what was purported to be, at that time, the most rigorous test of the religiosity/crime thesis; incorporating a number of attitudinal (religious salience) and denominational measures of religiosity to sundry forms of delinquency. The authors conjectured that part of the reason for the null findings of Hirschi and Stark (1969) stemmed from their focus on church attendance as the sole measure of religiosity. The authors found a significant, negative zero-order relationship between religiosity and delinquency among a sample of 600 adolescents, with multidimensional indicators of religiosity (including orthodoxy and religious salience) being the most potent correlates of delinquency. However, the multidimensional measure of religiosity failed to exert a significant effect on any form of delinquency in a fully nested multivariate model containing measures of moral beliefs (obedience to parents) and peer delinquency, leading the authors to surmise that while delinquency is less likely among the religious, this effect is likely a result of proximate

peer and family (Elifson et al. 1983). In a more contemporary study, Benda and Corwyn (1997) garner evidence that supports the proposition that the religiosity/crime relationship is only significant when multiple indicators of religiosity are used. In particular, religious salience (i.e. religiosity) and church attendance were found to be inversely related to status offenses, but not crime in general, among a sample of adolescents.

Despite these mixed findings, two exhaustive reviews of the empirical literature have demonstrated extensive support for the religiosity/crime relationship, particularly when the precise operationalization is ensured. In the first of such analysis, Johnson et al., (2000) advances a systematic review of 40 empirical studies in the religiosity/delinquency literature. The scholars passionately contend that methodological (multidimensional measures) issues are paramount when evaluating religiosity's impact on delinquency. This systematic review garnered unanimous findings in favor of an inverse relationship between religiosity and delinquency for studies (nine of forty) that included multiple-item indicators (i.e. more than three) of religiosity. In contrast, none of the studies that found mixed evidence regarding the religiosity/delinquency relationship used multiple indicators of religiosity. The researchers posit that some of the ambiguous findings regarding this relationship have been due to model specification stemming from an invalid operationalization of the core concept of religiosity, and when proper measurement is ensured, religiosity is a significant inhibitor of delinquent behavior (Johnson et al. 2000). In a related study, Baier and Wright (2001) conducted a meta-analysis on 60 articles that examined concerned the religion/crime relationship. Religiosity was measured by both attitudinal (e.g. belief in Jesus and the Devil) and

behavioral (e.g. church attendance) variables. Findings from the meta-analysis indicated that religious behavior and beliefs exerted a significant, moderate inhibitory effect on crime, particularly nonviolent crime.

Salience and fundamentalism are not the only dimensions that have been added to the measurement of religiosity. One study in the empirical literature has added “this-worldly” supernatural sanctions as a vying dimension of religiosity (Harris, 2003). This essentially refers to a belief that God will exact rewards and punishes upon individuals in this life, rather than the next (hellfire beliefs). Based on this assumption, this dimension of religiosity will presumably function as a strong deterrent to all forms of deviance due to the celerity (i.e. swiftness) of this form of supernatural sanctions. Harris (2003) uses logistic regression models to uncover that the “this worldly” sanction dimension of religiosity, along with religious social bonding, independently exert significant negative effects on perceived future ascetic delinquency among a sample of 1,393 adolescent members of the Church of Jesus Christ of Later-day Saints (Harris, 2003).

Scholars operating within this area are in agreement that the dearth of criminological studies containing a multidimensional measure of religiosity has been a colossal oversight, which potentially leads to the misspecification of theoretical models (Johnson et al. 2000; Baier and Wright, 2001; Harris, 2003).

Anti-Asceticism Hypothesis

Another interesting line of inquiry is that the religiosity/delinquency relationship may be offense-specific. For instance, the type of deviance being considered (whether it

be secular or ascetic) might have an impact on the religiosity/delinquency relationship (Burkett and White, 1974; Elifson et al. 1983; Benda and Corwyn, 1997).

Some researchers (Burkett and White 1974) propose that religiosity may have constraining effects for some type of behaviors more so than others. In particular, Burkett and White (1974) argued that religiosity might only have a significant deterrent impact on deviant behavior when secular rules are somewhat ambiguous in defining a behavior as deviant. For example, there is a wide consensus in most secular societies that crimes against persons or property cannot be tolerated. In this case, property and violent offenses are violations of both secular and religious normative standards. Conversely, some behaviors have more relative criminal status within secular society (and therefore may be more tolerated), but are strictly forbidden by the religious community. It is for behaviors that violate ascetic values (such as premarital sex, prostitution, the use of alcohol), but not necessarily secular laws (such as personal and property crimes), for which religiosity is expected to exert a greater constraining effect. This is the central premise of the anti-asceticism hypothesis. Burkett and White (1974) indeed found that religiosity (as measured by church attendance salience) had a much stronger negative effect on adolescent marijuana and alcohol use than on personal and property crimes.

Albrecht et al. (1977) studied the effect of religious participation and religious attitudes on the self-reported deviance (i.e. ascetic and secular delinquency) of Mormon teenagers. Their findings indicated that religious participation was one of the strongest inhibitors of ascetic deviance for both males and females. As predicted by Burkett and White (1974), the effects of religion are more pronounced when dealing with ascetic

deviance. Also consistent with Burkett and White was the finding that secular agents (such as family and peer expectations) were more inversely related to serious acts of deviance (Albrecht et al. 1977). In a later study, Elifson et al. (2000) found a multidimensional measure of religiosity to exert a more powerful effect on ascetic, as opposed to secular, offenses.

Cochran (1989) found strong support for the negative relationship between religiosity (measured by participatory salience) and deviance. Somewhat consistent with Burkett and White (1974), Cochran found, with the exception of the use of stimulants and the use of wine, that the differences between strongly and weakly religious individuals were larger for ascetic deviance than for secular deviance. Cochran stated that the surprising findings regarding the use of wine might be explained by the function of wine in many religious services (Cochran 1989). Cochran and Akers (1989) later garnered support for the anti-asceticism hypothesis by finding that adolescents who are deeply religious (i.e. participation, salience) are much less likely to drink alcohol or use marijuana than the slightly religious (Cochran and Akers, 1989). In a similar study, Benda and Corwyn (1997) conjecture that religiosity (church attendance, salience, evangelism) will only be a significant predictor of status offenses (e.g. alcohol use). In consonance with Burkett and White (1974), Benda and Corwyn (1997) find two of the three measures of religiosity to be significantly linked to status offenses, but not crime.

While most studies that examine the anti-asceticism thesis generally find support for the argument, there are a few notable exceptions. Sloane and Potvin (1986) found that while religiosity (i.e. attendance and salience) did appear to have a somewhat stronger

effect on status violations than on interpersonal violence, the differences were rather benign. Therefore, religiosity was stated to have a general negative effect on all type of deviant behavior. Cochran (1988) also failed to find support for Burkett and White's (1974) anti-asceticism hypothesis. While the inhibitory effect of religiosity (as measured by participatory salience) was strongest for the use of hard drugs, it was found to be extremely weak in regards to alcohol use. Also, few differences were found between the effects of religious salience on ascetic and secular deviance. Cochran (1988) concluded that the effects of religiosity on deviance are more generalized than previously thought. .

McIntosh, Fitch, Wilson, and Nyberg (1981) found, somewhat contrary to the anti-asceticism hypothesis, that religious salience and church attendance act only as modest controls against soft drug use, but are the strongest inhibitors of hard drug use. Previous studies (Burkett and White 1974) suggest that religion serves as an inhibitor of those acts that are not necessarily prohibited by secular agents, such as the use of soft drugs. Bainbridge (1989) found that religiosity deters several types of deviant behavior in which harm was afflicted on other people (burglary, rape, murder, assault), but it was found to be unrelated to homosexuality or suicide, when holding other forms of social control constant.

Grasmick, Bursik, and Cochran (1991) speculated that religious fundamentalists (e.g. Southern Baptists, Pentecostals) are more conservative in their beliefs, and favor a literal interpretation of the Bible that should serve to strongly prohibit deviant behavior. Based on this notion, the researchers surmise that the relationship between personal religiosity and deviance could be a product of affiliation to fundamentalist

denominations. Results indicated that fundamentalist Protestants were significantly less likely to cheat on their taxes than were their liberal/moderate Protestant (e.g. Presbyterians, Episcopalians) counterparts. In a similar study, Stack and Kposowa (2006) extend the Grasmick et al. (1991) study by applying religion (both religiosity and an ecological measure) to the issue of cross-cultural variation in *attitudes* (a unique contribution) toward tax fraud. The authors offer a comprehensive test of the religiosity/crime relationship, by merging psychological and ecological measures of religiosity. A key hypothesis was that individuals high in religiosity will be more likely to oppose tax fraud, and that this effect will be stronger in countries that have strong religious cohesion. The authors found strong support indicating that individual religiosity was among the most potent predictors of opposition to tax fraud, a finding that stands in congruence with the anti-asceticism hypothesis (Stack and Kposowa, 2006).

Evans et al. (1995) found that when controls were taken into account, participation in religious activities was the only measure of religiosity that exerted a significant negative effect upon crime. This relationship between religious activities and crime held up after all social controls were taken into account. Consequently, this inverse relationship remained present for both secular and ascetic offenses, therefore contradicting the anti-asceticism hypothesis. Evans et al. (1996) later asserted that both individual religiosity, (religious salience, involvement, and hellfire beliefs) and peer religiosity were significant predictors of general delinquency. However, religious effects upon delinquency were washed out when secular controls were included in the model,

possibly indicating that the religion/delinquency relationship may be spurious. Neither study found effects for religious fundamentalism on crime.

In a more contemporary examination of the anti-asceticism hypothesis, Stylianou (2004) observes that public support, or the lack thereof, stems largely from moral opposition to drug use, which is a function of religiosity. Using data gathered from a sample of college students, results indicate that religiosity exerts an indirect positive effect on opposition to drug use. Individuals high in religiosity are more likely to oppose the use of drugs on moral grounds, which then leads to an increased likelihood to view drug use as a potential cause of social harm. There then appears to be a direct, proximate effect between perceived notions of drug use inflicting social harm and a tendency to oppose the use of drugs. This research points to the fact that our public policies (e.g. drug-control policy) are largely a function of individual religiosity (Stylianou, 2004).

Contextual Effects: Parental Influence

A stream of within this vast literature has focused on how-aside from individual religiosity-the religious characteristics of those surrounding the child are paramount in shaping behavioral outcomes, including delinquency (Burkett and Warren, 1987; Peace and Haynie, 2004). In other words, being embedded in a religious or moral home or community might serve to enhance the crime-suppressing capacity of personal religiosity.

Regarding the contextual influence of parents and peers, Burkett and Warren (1987) found the effects of religiosity on marijuana use to be largely conditioned through the selection of peers who abstain from marijuana. In a similar study, Burkett (1993)

assesses the impact of perceived parental religiosity on the relationship between adolescent religiosity, peer alcohol use, and adolescent drinking. While parental religiosity was not found to be directly related to children's drinking behavior or the selection of friends that drink, it strongly influenced the religious commitment of their children, although this effect appears to diminish over time (due to the emergence of peers as a reference group). Based on the findings, Burkett (1993) infers that parental religiosity operates indirectly through child religiosity as an inhibitor of drinking behavior and the selection of friends who drink alcohol. These studies hint at a contextual component to the religiosity/crime relationship.

Building upon the link between parental religiosity, child religiosity, and child delinquency, (Pearce and Haynie, 2004) indicate that parental religiosity can foster the suppression of child delinquency only to the extent that there is a degree of religious homogeneity between parent and child. In other words, religious dissimilarity between the parent and child can - borrowing from the family literature that has established a link between religious dissimilarity and domestic violence (Ellison, Bartkowski, and Anderson, 1999) - actually serve the unintended consequence of delinquency amplification. Using data from the National Longitudinal Study of Adolescent Health, the central hypothesis is that while maternal religiosity is inversely related to the subsequent delinquency of the adolescent, religious dissimilarity (in either direction) will mediate the relationship between child religiosity and child delinquency. As expected, adolescent religiosity was found to be inversely related to adolescent delinquency. More importantly and in concert with expectations was the finding that religious homogeneity

(high mother/high child religiosity, low maternal/low adolescent religiosity) was associated with low levels of adolescent delinquency. In particular, the greatest risk for delinquency emanates from a mother with high religiosity and a child with low religiosity (dissimilarity), while the lowest risk comes from the pairing of high maternal religiosity with high adolescent religiosity (homogamy). Consequently, religious homogamy is at least as important as personal religiosity in inhibiting delinquency; potentially implying that contextual factors may have more salience than individual traits when determining the relationship between religiosity and delinquency (Peace and Haynie, 2004).

Given the findings of the preceding studies, there appears to be a substantial link between parental networks and the subsequent delinquency of children. It intuitively follows that if family context may exert significant effects on delinquency that contextual variables at a higher level of aggregation (e.g. neighborhood or community level) may serve the same purpose (Stark et al. 1982; Lee, 2005). This leads to a discussion of the moral communities thesis.

Contextual Influences: Moral Communities Thesis

Stark, after empirical studies refuting his original contention (Hirschi and Stark, 1969) that the hellfire thesis was insignificant began to accumulate, switched his level of analysis from micro to macro with the moral communities thesis (Stark, Kent, and Doyle 1982). In particular, Stark and associates (1982) noted that the explanation for the null findings in the benchmark study emanates from the fact that religiosity will only serve its crime-inhibiting affects when certain ecological conditions are present. The moral

communities thesis, as it has become known, represents a more traditional macrosociological paradigm in that it suggests the religiosity/crime relationship is contingent on contextual factors. Essentially, crime rates will be lower where there are a higher proportion of religious adherents. In other words, these communities specifically deter individuals from engaging in abhorrent activities. Stark conjectures that the lack of moral communities in the American West account for why religiosity is insignificant in reducing criminal activity in this region. Following this logic, individual religiosity will only inhibit delinquency when individuals are embedded in a social milieu that is characterized by elevated levels of religious participation (Stark et al. 1982).

Support was found for the moral communities hypothesis by Cochran and Akers (1989), who found that strongly religious individuals who come from denominations that strictly forbid alcohol or marijuana use are indeed more likely to refrain from using these substances when compared to strongly religious individuals that come from denominations that do not forbid such behaviors. In a very rigorous examination of the moral communities thesis, Chadwick and Top (1993) linked several elements of religiosity, family dynamics, and peer influence to delinquency in a sample of LDS youths. The previous work by Albrecht et al. offers a nice segue into the current study, in that the scholars attempt to ascertain if a cohesive religious community is imperative for uncovering negative relationships between religiosity and delinquency. The authors contend that one reason why Albrecht et al. (1977) found significant relationships between religiosity and delinquency was due to the fact that their sample was immersed in a cohesive religious community. The authors offer an innovative test of this central

hypothesis by observing the religiosity/delinquency relationship among a sample of non-embedded Mormon youth residing along the East coast to those results obtained in the earlier study (see Albrecht et al. 1977) in California, Idaho, and Utah. Results indicated that while private religious behavior (i.e. praying) was significantly related to property, victimless, and violent offenses among boys and girls, religious beliefs were related to property offenses only for boys. Integration into the local religious community, a proxy for moral communities, exerted a significant, negative effect on boys. Surprisingly, and somewhat in contradiction to the moral communities hypothesis, it appears that Mormon youth have internalized a rigorous set of ascetic values and principles and these characteristics are linked to a reduced likelihood of delinquent behavior *in both high and low LDS communities*; thereby illustrating that ardent commitment to religious principles makes a substantial difference in reducing crime, even in an area of low religious ecology. This finding points to the relevance of both sociological (moral communities) and psychological dimensions of religiosity (Chadwick and Top, 1993).

Emerging studies in this tradition have juxtaposed individual religiosity with religious communities to ascertain which measurement is more consequential to the study of crime (Richard, Bell, and Carlson, 2000). Richard et al., employing data from a sample of recovering Houston drug addicts, specifically linked changes in personal religiosity, church attendance (an admittedly weak operationalization of moral communities) and a self-help recovery group to self-reported improvement in drug use (i.e. Crack, alcohol, marijuana). Intriguingly, results indicated that change in church attendance and change in 12-step attendance were significantly and inversely related to

alcohol and drug use. These results can be taken as support, albeit soft support, for the moral communities explanation of the religion/deviance relationship. Involvement in a moral community (whether it be religious or recovery-related) was found to reduce the frequency of drug and alcohol use (Richard et al. 2000).

In what is undoubtedly the most interesting development stemming from the macrolevel work of Stark, Lee (2005) augments the extant literature by offering a comprehensive delineation of the relationship between ecological measures of religiosity and violent crime in rural counties. Here, Lee transcends the moral communities approach to truly elucidate the relationship between the religious institutional base (i.e. moral communities, civic engagement, and county-level presence of churches) and county-level measures of rural violence. Lee speculates that if the moral community thesis argument is to be upheld, then a county-level indicator of church-adherents should be inversely related to county level violent crime rates. Additionally, Lee suggests that the type of church adherents holds consequence when determining the crime-inhibiting capacity of religion, with the presence of certain denominations (Conservative Protestants) having an aggravating effect on crime rates (Ellison, Burr, and McCall, 2003). Lee finally offers a unique contribution to the existing literature: the argument that the mere presence of churches will be linked to lower crime rates, due to the fact that the church, particularly in rural areas, serves as much more than a house of worship. In actuality, the church functions as the focal point of the community, and thereby is one of the more integral social institutions, serving as a deterrent to criminal activity and an incubator of collective efficacy. Consonant with expectations, Lee finds that all four

measures of the “institutional base” of religion are significantly related to crime rates, in the expected direction, net of controls. Most importantly for the current discussion, crime rates were found to be lower in counties with a high percentage of church adherents; offering unequivocal support to the moral communities thesis. Incidentally, in the fully nested regression model, the mere presence of churches was found to be significantly related to a decrease in county level violent crime rates. Lee contends that these findings are ostensibly the institutional equivalent to the individual-level moral communities thesis of Stark. We can logically infer from this pivotal extension to the moral communities thesis that religion has a suppressing effect on crime *rates* in religious areas.

While Lee’s (2005) assessment of the moral communities hypothesis certainly served to apply an ecological analysis, the work of Stack and Kposowa (2006) take this study to an even higher level of aggregation, by employing a cross-cultural (36 nations) examination of the moral communities thesis. The authors also offer the most robust statistical analysis of the moral communities hypothesis by using multi-leveling modeling techniques to ascertain the importance of individual effects vis a vis ecological effects. Substantial support was garnered for the effects of individual religiosity on tax fraud attitudes; as religious (attendance, religious identification, etc.) individuals were much more likely to oppose tax fraud. Mixed results were found regarding the viability of the moral communities thesis. It was found that aggregate-level religiosity (i.e. percent church adherents) had no consequence on individual tax fraud attitudes. The authors suggest that the lack of supportive evidence for the moral communities hypothesis can be attributed to aggregated unit of analysis (nations). Perhaps further disaggregation would

be more likely to flesh out the true effects of moral communities. Incidentally, when the sample was disaggregated by religious adherence (divided between those who were and were not religious adherents), the relationship between individual religiosity and opposition to tax fraud shared a positive relationship. In a further test of the moral communities thesis, Stack and Kposowa (2006) find nations with a high concentration of religious adherents (i.e. over 50% of the population) were also the same nations that were more likely to witness a significant relationship between individual religiosity and tax fraud attitudes; corroborating the central tenets of the moral communities thesis. Meanwhile, in nations marked by a low concentration of church adherents (communist nations), the religiosity/TFA relationship did not reach statistical significance. The Stack and Kposowa (2006) piece offer a substantial augmentation to the moral communities literature by denoting that this hypothesis has utility at higher levels of aggregation.

The preceding discussion of religious communities is imperative to any review of the relationship between religion and crime because it clearly delineates the mechanisms by which religion is related to crime, and in turn, the manner in which religiosity is related to crime. It appears that individual religiosity may only buffer individuals from unruly behavior when these individual are deeply immersed in a critical mass of religiously oriented individuals (Stark et al. 1982; Richard et al. 2000; Lee, 2005).

Is the Religiosity/Crime Relationship Spurious?

A handful of articles in religiosity/crime literature have posited that the relationship is spurious, and can be accounted for with measures from various

criminological theories (see Cochran, Wood, and Arneklev 1994; Benda and Corwyn, 1997; Heaton, 2006). Among the first studies to levy this claim against the religiosity crime relationship was Cochran et al. (1994) who viewed the religiosity/crime relationship to be contingent upon individual levels of arousal. Borrowing from Lee Ellis (1987), arousal theory stipulates that certain individuals are neurologically suboptimally aroused, which essentially means that these individuals require more stimulation to reach optimal levels of arousal. In some cases, these individuals will turn to criminal behavior in order to reach their “kicks”. These suboptimally aroused individuals share with criminals the following characteristics: impulsivity, a penchant for risk-taking behaviors; easily bored. Cochran et al. (1994) borrowed the principles of arousal theory and specifically applied them to the religiosity/crime relationship. The authors proposed that these individuals are unlikely to find religious activities stimulating, and are therefore less likely to participate in religious activities and more likely to be predisposed toward crime. The authors found that once arousal variables were taken into consideration, the religiosity (salience and participation)/delinquency relationship became insignificant, leading the authors to claim that the religiosity/crime relationship is contingent upon individual levels of arousal and therefore is spurious. The operationalization of arousal, is very similar to key elements found in Gottfredson and Hirschi’s (1990) self-control theory, and a handful of studies have attempted to explicitly make that connection (Schoepfer and Piquero, 2006; Welch, Tittle, and Grasmick, 2006). In a more rigorous test of the spuriousness claim, Regnerus and Smith (2005) offer mixed support. The scholars infer from their results taken from Add Health that while religiosity is indeed an

endogenous (i.e. an effect) variable, and future research should make a concerted effort to uncover these exogenous factors (i.e. personality traits), religiosity remains a viable (religious salience in particular), although reduced, predictor of various indicators of well-being (family well-being, general health, self-report theft). Like the Cochran et al. study, many of these “exogenous” factors were similar to characteristics of low self-control (Regnerus and Smith, 2008).

Arousal and self-control are not the only criminological theories that have been hypothesized to reduce the religiosity/delinquency relationship to insignificance; variables extracted from social bonding and social learning theories have also been employed for this purpose. Cochran et al. (1994), while finding the religiosity/delinquency relationship to be spurious due primarily to measures of arousal, also found social control measures to render the relationship insignificant. Benda and Corwyn (1997) find that religiosity remains a significant predictor of status offenses until measures derived from social learning and social control theory are included in a hierarchical regression model. These collective findings indicate that when relevant theoretical controls (social learning, social control, arousal) are included in a fully nested model; the religiosity/delinquency relationship becomes spurious (Cochran et al. 1994; Benda and Corwyn, 1997).

While there is some empirical support for the spurious argument, there is not uniformity on the subject. Johnson et al. (2001) directly assess the claims of spuriousness by using longitudinal data from the National Youth Survey. The scholars find confirmatory evidence that indicates the religiosity/delinquency relationship is *not*

spurious, nor is it completely indirect. In particular, variables derived from social learning and social control theories, while exerting a partial mediating effect (i.e. religiosity enhances social control), failed to reduce the religiosity/delinquency relationship insignificant. The negative direct effect of religiosity on delinquency remained significant across waves and when controlling for the aforementioned intervening theoretical variables.

Specifying the Religiosity/Crime Relationship

While a number of studies (see Baier and Wright, 2001; Johnson et al. 2000 for an extensive review) have demonstrated that there is an inverse relationship between religiosity and crime, there is a dearth of studies that attempt to specify the mechanisms by which this process operates. There is an emerging thread within the religiosity/crime literature that attempts to further explain this process (Burkett and Warren, 1987; Benda and Corwyn, 1997; Simons, Simons, and Conger, 2004). It warrants mentioning that these empirical pieces are vital to the current study, as they indicate that religiosity may impact various behavioral outcomes in an indirect manner (as stipulated in the GST literature).

Simons et al. (2004) contend that religiosity exerts its impact on delinquency through the intervening variables of value commitment (a proxy for social bonding) and peer selection (a proxy for differential association/social learning). The scholars augment the original study in this area (Burkett and Warren, 1987) by employing a more general measure of deviance, and by introducing parental religiosity as an integral explanatory

mechanism in the religiosity/delinquency relationship. Parents particularly affect the relationship between the subsequent religiosity and delinquency of their children in two distinct ways: (1) by directly shaping the religious views of their children; and (2) quality of parenting (see Benda and Corwyn, 1997) for another study that addresses this issue). Briefly, research has concluded that the family is a more salient agent of religious socialization than the church (Cornwall, 1987), meaning that religious parents are more likely to encourage the religiosity of their children. As expected, the researchers found religiosity/delinquency relationship was indirect and operated through affiliation with deviant peers and traditional moral beliefs. Regarding parental religiosity, this construct has no direct effect on child delinquency, but there is a substantial indirect effect, as expected. This study advances the religiosity crime literature by articulating the manner in which religiosity inhibits delinquency. In this case, religious individuals are shielded from delinquent activities because religiosity enhances moral beliefs while simultaneously reduces the likelihood of the child having delinquent peers. Additionally, parental religiosity is of consequence due to the fact that it directly affects childhood religiosity, and is also related to parental efficacy (Simons et al. 2004).

The preceding studies are integral to this project due to the fact that they are among the first to stipulate that while the religiosity/crime relationship is likely not spurious, there is a great deal of ambiguity regarding the processes by which religiosity relates to delinquency. These recent studies specifically suggest that the religiosity/delinquency relationship may in fact operate through other constructs and theories that occupy a more central position in the criminological literature. It is the

contention of the current study that religiosity does, in some cases, exert a significant, inverse effect on *certain* types of delinquency. Historically, and as evidenced in the preceding studies, the effects of religiosity on crime have been primarily theorized in relation to social control and social learning variables (Jang and Johnson, 2003). There is a relative paucity, with a few notable exceptions (Jang and Johnson, 2003, 2005) outlined below, of studies that view the role of religiosity as a coping mechanism for stress. There is a developing stream of research within General Strain Theory that specifically looks at religiosity as a mediating or intervening variable that helps strained individuals find conventional coping strategies to crime-generating negative emotions (Jang and Johnson, 2003, 2005).

Religiosity, Strain, and Delinquency

There have been a handful of studies in the strain literature that are particularly relevant to the current study. The point of departure for the current study is the empirical assessments offered most notably by Jang and Johnson (2003, 2005), as well as Johnson and Morris (2008). The unifying theme that permeates through these studies is that religiosity, a previously omitted external conditioning factor within the GST framework, may serve as a significant buffer to delinquent adaptations to strain-induced negative emotions. Considering the relevancy of these articles for the current project, a detailed elucidation of these studies is provided.

In the first in a series of studies in this area, Jang and Johnson (2003) address the following ambiguities in the extant GST literature: (1) The lack of uniformity regarding

the relationship between negative emotions and deviance; and more importantly (2) articulating the conditioning factors that ostensibly affect the selection of coping strategies. Related to the second concern, Jang and Johnson (2003) posit that previous research has garnered only limited support for the role of conditioning factors, and external conditioning factors (e.g. social support) have received more empirical support than have internal conditioning factors (i.e. self-efficacy). The scholars contend that these issues must be resolved if GST is to continue to function as a viable criminological theory. Specifically addressing this concern, Jang and Johnson assess the conditioning as well as main effects of religiosity on strain, negative emotions, and deviance.

First, the authors make an integral contribution to GST by delineating the conceptual distinction between inner and outer-directed emotions and deviant coping. In particular, individuals that have outer-directed emotions are hypothesized to be more likely to employ an outer-directed coping strategy (e.g. violence), and vice-versa. Therefore, one can expect negative emotions to elicit a positive effect on deviance, with the same-directed effects being larger than opposite-directed effects.

Most germane to the current study, and therefore worthy of more attention here, is Jang and Johnson's (2003) contention that religiosity may serve as an external conditioning factor, in essence buffering an individual from the criminogenic effects of strain. The scholars contend that there is a need for this line of inquiry given that most of the empirical tests of GST have focused on the crime-inhibiting capacity of *internal* conditioning factors (e.g. self-esteem, self-efficacy). Jang and Johnson posit that when juxtaposed against internal conditioning factors, religiosity should mediate the

relationship between strain and negative emotions, as well as negative emotions and deviant coping strategies. If religiosity mediates the relationship between strain and deviant coping strategies, one would expect to find it in this sample, given the heightened levels of religiosity and the centrality of religious institutions among African Americans. Jang and Johnson note that the temporal ordering in the relationship between strain, negative emotions, conditioning factors, and deviance is somewhat convoluted, and in need of further elaboration. Pursuing this logic, the authors specifically test whether the effects of negative emotions on deviance as well as the effects of strain on negative emotions are moderated by internal and external conditioning factors.

The researchers answer the extant hypotheses by employing data from a nationally representative sample of African Americans. Specifically, the authors suggest that the strain/negative emotions/crime relationship has not been fully specified, and that the strain/crime relationship will be fully mediated by negative emotions. A novel contribution advanced by Jang and Johnson revolves around their focus on the conceptual distinction between inner and outer-directedness in terms of emotions and deviant coping. The authors additionally introduce a caveat that was previously absent in the strain literature: the use of religiosity as a conditioning factor that affects the selection of coping strategies. Jang and Johnson hypothesize that religiosity serves as an external conditioning factor that distinctively buffers the effects of negative emotions on deviance.

The authors address the first hypothesis by selectively focusing on the conceptual distinction between inner and outer-directedness of negative emotions and deviant coping strategies. The authors strategically sample African Americans, operating under the

assumption that African Americans are more likely than other racial groups to externalize their strain and therefore to externalize their deviance (i.e. interpersonal aggression). The authors additionally extend strain theory by searching for new conditioning factors that interact with strain and negative emotions. Employing data from the National Survey of Black Americans, results indicate that-consistent with hypotheses- strain exerts a positive effect on negative emotions which in turn has a positive relationship on deviant coping strategies (operationalized as drug use, fighting/arguing, and a composite measure of general deviance). Also in concert with expectations, the effect of strain on deviance is entirely mediated by negative emotions in the nested model. Additionally, inner-directed emotions have larger effects on inner (i.e. drug use) rather than outer (fighting/arguing) directed deviance; and vice-versa. Consequently, results support the notion that religiosity (both organizational and personal indicators) serves as a buffer for the strain/negative emotions relationship, in particular for the form of negative emotions (outer directed emotions) presumably most likely to elicit a deviant coping strategy. However a qualification is in order: while religiosity does appear to weaken the direct effects of negative emotions on deviant coping, it fails to completely ameliorate the deviance-generating effects of negative emotions in reaction to strain. Furthermore, findings indicate that individuals who are religiously committed are less likely than those who are not to engage in deviant coping due to the fact that religiosity (1) buffers the effects of negative emotions on deviance; and (2) religiosity directly and indirectly influences coping strategies. This presumably indicates that while religiosity directly affects emotional reactions to strain; making them more likely to experience negative

emotions but less likely to experience outer-directed emotions (e.g. anger); strain still exerts a significant positive effect on negative emotions, net of religiosity. Interestingly, it does appear that religiosity reduces, but fails to eliminate, the relationship between strain-induced negative emotions and deviance. Paradoxically, religiosity was found to have a *positive* impact on inner-directed negative emotions (feeling anxious and depressed) presumably related to the idea that religious individuals are more likely to internalize frustrations.

In a related study, Jang and Johnson (2005) attempt to account for gender differences in coping mechanisms among African Americans. Specifically, the authors attempted to uncover why women are more distressed than men, but are less likely to respond to such strain by employing deviant coping strategies. The authors argue that these discrepancies can be explained by documented gender differences in religiosity. In particular, women consistently report higher levels of religiosity than men, and are therefore more likely to use religious influences as coping resources. It intuitively follows that religiosity's distress-buffering effects are larger for women than men, and the inverse effects of religiosity on interpersonal aggression will be larger for women than for men. It is additionally suggested that women are less likely to adopt criminal coping strategies due to the fact that women are more likely to respond to strain with *self-directed* emotions, such as depression and anxiety. Furthermore, it appears that one reason African American women are less likely than men to resort to aggression is due to the fact that they are more likely to experience physical distress, which is less likely to be accompanied by aggression-inducing other-directed emotions. Results generally confirm

that African American women are less likely to fight and argue with others due to the strain-reducing impact of religiosity. Furthermore, African American women are more likely to have their anger accompanied by anxiety and depression.

Perhaps even more relevant to the current study is the recent work by Johnson and Morris (2008) in the area of GST, religiosity, and delinquency. This piece extends the Jang and Johnson thesis by being the first to offer a nationally-representative, longitudinal examination of the crime-buffering properties of religiosity. The authors tested this guiding hypothesis, along with many others (including the gendered effects of GST), by using the first two waves of the National Longitudinal Study of Adolescent Health. Results, largely inconsistent with GST, indicated a direct, independent effect of both physical victimization and school-related strain on both violent and property delinquency, with the effect being considerably when predicting violent delinquency. Of more consequence to the current project, the authors found a weak, but statistically significant, direct inverse effect of religiosity and social support on violent, but not property, offending; suggesting that religious individuals are less likely to resort to violent offending. However, and in direct contrast to the Jang and Johnson (2003, 2005) thesis, significant *conditioning* effects for religiosity on the strain/deviant outcomes relationship were only found when considering the interaction between religiosity and school-related strain; and, consequently, the effects only marginally (Odds Ratio of 1.01) moderated the effect of strain on property and violent offending. Incidentally, the results failed to show that religiosity conditions the relationship for either type of strain on property or violent delinquency. These findings stand in stark contrast to the Jang and

Johnson studies, and offer support that the “conditioning” effects of religiosity, as well as social support and self-esteem are weak at best, and maybe altogether insignificant when observing a nationally representative, longitudinal sample.

The current study stems largely from the aforementioned studies. While these works represent seminal, groundbreaking studies on the role of religiosity as a potential buffer to strain-induced negative emotions, there were a number of gaps in those studies that this study specifically attempts to improve upon.

While there is a degree of support for the use of cross-sectional, as opposed to longitudinal data, when assessing GST (see Agnew, 2001), data with relatively short lags between waves should also be able to capture the contemporaneous effects of strain-induced negative affect on delinquency. Moreover, assessing the proper temporal ordering is nearly impossible when using cross-sectional data.

Additionally, perhaps the most glaring shortcoming in the Jang and Johnson series (2003, 2005) is their focus on a non-representative sample. While their findings offer important contributions to theorizing in GST, it is impossible to generalize those results to a wide population. Taken this liability into consideration, the present study employs the use of representative, longitudinal data, for purposes of offering a more comprehensive analysis of the relationship between strain, external conditioning factors, negative emotions, and delinquency.

On a similar note, while it must be acknowledged that the current study shares many of the same features (i.e. theoretical argument, data,) as the Johnson and Morris (2008) study, I offer a more robust, conservative examination of the Jang/Johnson (2003,

2005) thesis-and by extension a more pertinent contribution to the extant GST literature. In particular, the Johnson and Morris (2008) failed to include any indicator tapping into individual levels of anger. While the Add Health data does not contain a measure of anger as indicated by the individual respondent, there is a parental perception indicator of child anger (dispositional) that will be included in the current study. Given the centrality of anger within the GST framework, it is argued here that an indicator of anger-even if not ideal-should be employed in a comprehensive examination of GST. Moreover, the Johnson and Morris (2008) piece failed to include a number of salient conditioning effects that are included in the Add Health, including: differential association, parental attachment, and school commitment. As indicated previously, while some of these measures are less than ideal-most notably the measure of differential association-a test of GST that fails to include such conditioning effects is insufficient. The current examination additionally transcends previous work in this area by including a more exhaustive list of strains; some of which were previously untapped within GST. Lastly, given that Agnew (1992) has positioned GST as a “general” theory of crime, it is argued that strain will exert a significant, positive effect on a litany of *deviant* outcomes, some of which are analogous to delinquency (Broidy and Agnew, 1997; Kaufman, 2009; Sharp et al. 2001, 2005; Walls et al. 2007). The current study employs the use of coping mechanisms which include delinquent acts, as well as deviant acts that are analogous to delinquency (i.e. suicide). While it is fully acknowledged that the originality of the current study is somewhat compromised by the preceding work, I contend that this work

represents a pertinent extension to the extant GST literature; in particular to the illumination of moderating effects within GST.

CHAPTER III

CONCEPTUAL MODEL AND HYPOTHESES

Agnew's General Strain Theory posits that negative treatment by others and stressful life experiences (i.e. strain) lead to negative affective states (e.g. anger, depression). In turn, these emotions are capable of placing an inordinate amount of pressure on the individual to correct the situations that potentially lead to the experience of strain. Delinquency is strategically positioned as a means of reducing strain (e.g. cheat on one's taxes), to seek revenge against the parties responsible for the strain (e.g. violent retaliation in response to a physical victimization), or to ameliorate the negative emotions induced by strain (e.g. habitual drug or alcohol use). Agnew later (2001) implied that only certain strains would eventually result in a delinquent response. In particular, strain is likely to lead to delinquent adaptations when strain is: viewed as being unjust, viewed as being intense, and associated with other external features (e.g. low social control, low self-control, and deviant modeling).

An interesting line of research centers around potential conditioning effects that serve to either amplify (e.g. deviant beliefs, deviant peers, low-self control) or obscure the effects of strain-induced negative affect on delinquent behaviors (Agnew, 2001; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004). In other words, as the

strain/negative emotions/deviance relationship is contingent on the level of these effects, these “conditioning” variables essentially moderate the relationship between strain, negative emotions, and deviant behavior. As mentioned previously, most of the scientific studies in this area have primarily focused on *internal* conditioning effects, without a corresponding emphasis on *external* conditioning effects (but see Capowich et al. 2001; Jang and Lyons, 2007). In their watershed study, Jang and Johnson (2003) explicitly positioned religiosity as a salient, although previously neglected, external conditioning variable to the relationship between strain, negative affect, and delinquent coping mechanisms. The scholars found religiously committed individuals to be less likely to become angry and engage in deviant coping, but more likely to experience other non-angry negative emotions. In particular, while religiosity did not completely mediate the link between strain and either negative affect or deviant coping, religiosity was found to significantly reduce the impact of negative emotions on *inner-directed* deviant coping strategies. In other words, the religiously committed are less likely to resort to deviance because they are less likely to experience anger, and religiosity serves to completely buffer the relationship between the inner-directed negative emotions (that they are more likely to experience in the first place) and deviance.

In a recent examination of the Jang and Johnson thesis, Johnson and Morris (2008) failed to garner supportive evidence that religiosity moderates the strain/negative emotions/deviance relationship. Specifically, the authors found interaction effects between two forms of strain (physical victimization and school-related strain) and religiosity (a summated scale of religious salience and participatory items) to be

insignificant when predicting violent and property delinquency, among a nationally-representative, longitudinal sample of adolescents. Gauging from recent research in this emerging area of GST scholarship, evidence supporting the conditioning, crime-buffering effects of religiosity on the strain/delinquency relationship is mixed. While the Johnson and Morris piece offers an integral contribution to the GST literature, the research suffered from a series of methodological/conceptual shortcomings that will be addressed in this work. Therefore, the current project uses the recent work of Jang and Johnson (2003, 2005), as well as Johnson and Morris (2008) as a proverbial springboard in extending research in the tradition of General Strain Theory.

Conceptual Model

While the present research proposes to offer a broad empirical assessment of the central premises of General Strain Theory, there are a few areas of specific concentration that warrant further description. In particular, this study attempts to address gaps in the extant GST literature by offering a key augmentation to an emerging area of research first embarked upon by Jang and Johnson (2003, 2005).

A glaring liability in the Jang and Johnson study is that their use of cross-sectional data for purposes of illuminating causal relationships. Although Agnew endorses the use of cross sectional data, based on his assertion that strain is hypothesized to have contemporaneous effects on crime, the use of cross-sectional data will potentially conceal contaminating effects between variables. In particular, the use of cross-sectional data precludes researchers from delineating the proper temporal ordering of relevant variables.

Following this logic, it could be the case that strain is actually an endogenous variable that is a function of prior delinquency, and therefore strain does not cause delinquency, as is hypothesized. To address this concern, this study incorporates the use of longitudinal data for purposes of properly specifying the correct causal ordering between strain, negative affect, and delinquency.

It must be acknowledged that Agnew asserts that the effects of strain on delinquency are contemporaneous, and long time lags between surveys may not truly capture the criminogenic effects of strain. Despite this valid concern, some researchers in this area have embraced the use of longitudinal data (Slocum et al. 2005). Specifically, it is reported that strain (especially intense or persistent strains) have been linked to subsequent delinquency for periods of up to three years. Given that the time lag between the first two waves of Add Health data is just one year, the use of longitudinal data is easily justifiable (see Jang and Johnson, 2003 for justification in the use of longitudinal data with a short time span between waves).

As alluded to in the preceding chapter, while Johnson and Morris (2008) offer perhaps the first empirical assessment of the work of Jang and Johnson by addressing many of the shortcomings inherent in that particular study, the Johnson and Morris work is also plagued by a number of conceptual inadequacies. In particular, the authors fail to incorporate a measure of individual anger into their models of deviant behavior. As noted earlier, anger occupies a salient position within the GST paradigm, and any comprehensive assessment of GST should include such a measure, even if the measure is less than perfect (Agnew, 1992, 2001). I include a measure of parental perception of

respondent anger, from the parent interview conducted concurrently with the in-home Wave I interview of the Add Health. Incidentally, this is the same data that was utilized in the Johnson and Morris (2008) manuscript. Additionally, the current study includes a more robust measure of religiosity as that used in Johnson and Morris's work. Specifically, I use a multi-faceted measure of religiosity, capturing key dimensions (e.g. fundamentalist beliefs) of the construct that lie outside of participation and salience. Lastly, the measures of strain and deviance used in the current research transcend those included in the Johnson and Morris (2008) piece, and offer a more comprehensive test of the "generality" of General Strain Theory.

This study incorporates the use of the first two waves of the National Longitudinal Study of Adolescent Health. Specifically, I use four measures of involvement in delinquent/deviant behavior, all measured during Wave II. All measures of strain, along with potential mediating, moderating, and control variables were measured during the Wave I interview. Wave I strain is employed as the central independent variable that is presumed to exert significant effects on a series of Wave I and Wave II endogenous variables; negative affect, delinquency, and deviance. Strain experienced during Wave I is presumed to exert its effect on Wave II delinquency through the intervening variable of Wave I negative emotions, net of wave I delinquency and all relevant controls. The choice of Wave I negative emotions was used specifically because: (1) the only indicator of anger in the Add Health is the parental perception measure, which was measured simultaneously to the Wave I, in-home individual interview; and (2) the time period for the depression measure is limited (i.e. did you

experience any of the following symptoms in the previous *week*) and are therefore likely to occur after the experience of strain (measured assessing stressful events that occurred in the year prior to the interview).

Additionally, a series of Wave I conditioning effects (i.e. social support, social control, self-esteem, differential association, religiosity) are hypothesized to moderate the effects of strain/negative emotions by either suppressing or aggravating the relationship between strain-induced negative affect on delinquency and analogous items. As mentioned previously, to ensure that the relationship is properly specified in terms of causal ordering, Wave I measures of negative affect, delinquency, and religiosity will be included for purposes of fully decomposing the associations between strain, negative affect, conditioning effects, and delinquency.

Hypotheses

The first hypothesis in the current study, borrowing from previous research on GST (Jang and Johnson, 2003, 2005; Kaufman, 2009; Piquero and Sealock, 2004), concerns the independent effects of strain on negative affect. Agnew, in his watershed study, argues that the relationship between strain and crime/delinquency is indirect-operating through strain-generated negative emotional states. Based on this assumption, I hypothesize that *wave I strain will be a significant, positive predictor of Wave I negative affect* (see above for a theoretical justification for the use of Wave I negative emotions).

Agnew (2001), in his quasi-reformulation of GST, explicitly delineated the types of strain most likely to lead to delinquent responses. Agnew, in line with his initial

premise, notes that the strain/delinquency relationship is not entirely deterministic and that some forms of strain are more consequential in fostering a deviant response to strain-generated negative affect. Specifically, strains that are viewed as being unjust, high in magnitude, associated with low social control, and create pressure for criminal coping, are the types of strain most likely to lead to delinquency. Agnew stresses that these types of strain are disproportionately found in social relationships where the individual is not treated in a fair manner. Based on this assumption, it is highly plausible that internal-related strains (e.g. health-related, disjunction between aspirations and expectations, etc.) are less likely to engender outer-directed emotions. *It is therefore hypothesized that the “stressful life events” dimension of strain will be more strongly linked to inner-directed emotions, while the “negative relations with others” dimension will exert more potent effects on outer-directed emotions.* The latter dimension of strain specifically deals with social relationships that are unpleasant to the individual (e.g. arguments, victimization), and are presumed to be more likely to elicit outer-directed emotions. It warrants mentioning at this juncture, although it will be discussed in detail later, that this hypothesis offers considerable explanatory credence as to why males are overrepresented in most forms of criminal/deviant behavior (Broidy and Agnew, 1997). In particular, Broidy and Agnew suggest that gender differences in criminal/deviant behavior are largely a product of emotional responses to strain; with females being disproportionately prone to experience depressive symptoms, along with anger, and the experience of these emotions leads to a decreased likelihood in external responses to strain (i.e. violent crime). Taking this argument into consideration, it is hypothesized that *females are more*

likely than males to respond to strain with inner-directed negative emotions, which in turn are negatively related to violent coping mechanisms. Further support for this contention is offered by Jang and Johnson (2003), who find inner-directed emotions to be more commonly linked to inner-directed deviance and vice-versa for outer directed emotions and deviance, and by extension offer a partial explanation for gender differences in violent crime. It is argued that the current analyses offer a more rigorous test of this thesis by testing these propositions among a nationally representative sample. Likewise, this study is better equipped to reveal pertinent cause and effect relationships given the longitudinal nature of the sample

It is of consequence to note that Agnew specifically instructed the criminological community that the empirical validity of GST is entirely contingent on the mitigated effects of strain on delinquency. More specifically, GST is specifically linked to crime through the mediating variable of negative affect, as the unmitigated effects of strain on delinquency may conceivably be interpreted through the lens of competing theories (e.g. social control). Therefore, GST can only receive a full endorsement if its effects on delinquency operate through the mediating variable of negative emotion. Based on this mandate from Agnew, it is hypothesized that *strain will be positively related to disaggregated measures of deviance, but exclusively through the intervening variable of negative affect.* Therefore, the introduction of negative affect, particularly anger, to a statistical model should fully render the strain/delinquency relationship insignificant.

As alluded to above (see hypotheses two and three), scholars in this area (Agnew, 1992; Jang and Johnson, 2003) posit that strain evokes a host of inner and outer-directed

negative emotions. An individual that externalizes the blame for their strain is more likely to experience an outer-directed emotion like anger, while an individual that internalizes the blame is appreciably more likely to experience an inner-directed emotion (e.g. depression). Consequently, the type of negative affect experienced has ramifications for the selection of a specific coping strategy. Inner-directed emotions are more likely to induce inner-directed coping responses, and outer-directed emotions are more likely to induce outer-directed coping resources (Jang and Johnson, 2003). Therefore, it is hypothesized, in line with Jang and Johnson (2003), *that the same-directed effects (e.g. depression on drug use) of negative emotions on delinquency will be larger than their opposite-directed counterparts (e.g. depression on violence).*

As mentioned in the previous chapter, the effects of religiosity on crime/delinquency have traditionally been viewed through the lens of social control and social learning theory, but the current study specifically positions religiosity squarely within the GST framework. While Jang and Johnson (2003) were among the first to examine the conditioning and main effects of religiosity in relation to strain, negative affect, and deviance, their study suffered from a few notable limitations that the current study specifically addresses. Most notably, the current study-in line with Johnson and Morris (2008)-attempts to extend the work of Jang and Johnson by improving upon the representativeness and generalizeability of the findings. While Jang and Johnson (2003) defend their sample selection by asserting that if religiosity is to indeed have crime-buffering effects, one would find such effects among a population with elevated levels of religiosity; their sample design precludes them from applying their results to a general

population. Furthermore, the ability to reveal cause and effect relationships is compromised when using cross-sectional data. The current research augments this line of research by employing the use of a nationally-representative, longitudinal sample. While the procedures used by Jang and Johnson (2003, 2005) can certainly be justified, there is a definite need within the GST literature to apply the findings to a larger, broader population. Taking the preceding issues into account, the current study offers a replication of Jang and Johnson's (2003) study. To this end, it is hypothesized, that *religiosity, along with other pertinent conditioning variables (e.g. social support, social control, differential association, self-esteem), will moderate the relationship between strain, negative emotions, and deviant coping responses.* Again, although the recent examination of the Jang/Johnson thesis employed the use of Add Health data, and explicitly tested their assumptions, I posit that this test goes beyond the Johnson and Morris (2008) piece by offering a more valid measure of religiosity, and including more strain, conditioning, and outcome measures.

Broidy and Agnew (1997), after careful rumination on the topic, argue that although the extant stress literature reveals that women experience more strain than men, it is the types of emotional reactions to strain, as well as gender differences in the conditioning factors said to mediate the negative emotions/deviance link, that account for gender differences in criminal responses to strain (although they never explicitly test this premise). Following this logic, Jang and Johnson (2005) conjecture that gender differences in religiosity are a cogent explanation for why females are less likely to adapt criminal/delinquent coping strategies in response to strain. Moreover, the direct,

independent effects of religiosity on interpersonal aggression are greater for women. The authors further explain this effect by positing that women experience higher levels of religiosity than men, and this heightened level of religiosity translates into salient gender differences in this prominent source of crime-inhibiting social support (Jang and Johnson, 2005). Not only does religiosity condition the strain/distress, distress/aggression relationship (due to higher levels of religiosity among women), but religiosity also has a stronger crime-suppressing effect for females. Women are simply more involved in religiosity (see Sherkat and Ellison, 1999), regardless of the operationalization of the construct, and this pays dividends when considering gender differences across a number of negative behavioral outcomes. Borrowing from this logic, I extract a hypothesis that specifically examines gender differences in emotional responses to strain through the conditioning effect of religiosity. While the previously mentioned gender hypothesis (females are more likely than males to respond to strain with inner-directed negative emotions) was directly extracted from Broidy and Agnew (1997), the latter is a direct test of the Jang and Johnson (2005) thesis. Specifically, *the direct effects of religiosity on violence will be larger for women than men. Furthermore, females are more likely than males to experience inner-directed emotions, which in turn, are inversely related to violence.*

It is posited that the current research offers a rigorous, comprehensive examination of the central propositions of GST, as well as a more thorough analysis of emerging areas within the GST literature. In particular, this will be accomplished by testing the following hypotheses:

Hypothesis 1: Wave I Strain will be a significant, positive predictor of Wave I negative affect.

Hypothesis 2: Wave I “stressful life events” will have a stronger impact on Wave I inner-directed emotions (depression), while Wave I “negative relations with others” will have a stronger impact on outer-directed emotions (anger).

Hypothesis 3: Females are more likely than males to respond to strain with inner-directed negative emotions, which are negatively related to violent coping mechanisms.

Hypothesis 4: Wave I strain will be a significant, positive predictor of Wave II delinquency/deviance.

Hypothesis 5: Wave I Negative Emotions will have a significant, positive effect on Wave II deviance, and will render the strain/delinquency relationship insignificant.

Hypothesis 6: Wave two negative emotions will have a stronger effect on same-directed deviance than opposite-directed deviance”

Hypothesis 7: Religiosity, along with other internal and external conditioning effects, will exert direct and moderating effects on the relationship between strain, negative affect, and delinquency.

Hypothesis 8: Religiosity will have a stronger, inverse, direct effect in predicting deviance for females than for males.

CHAPTER IV
DATA AND METHODS

Sample

This research is based on data extracted from the first two waves of the National Longitudinal Study of Adolescent Health (Add Health). The Add health data is funded by the National Institute of Child Health and Human Development and represents the most voluminous, inclusive panel survey of adolescent health (Udry, 2003). The nationally representative, longitudinal sample currently spans four waves of in-home interviews, following the adolescents (i.e. 7-12th graders) well into young adulthood (ages 24-32). The Add Health is a multi-stage stratified cluster sample of American adolescents. Specifically, individuals were randomly chosen from a sample of 132 nationally representative schools-stratified by race, size, region, school-type (public vs private) and urbanicity. The schools were selected from a list of American schools by the Quality Education Database for inclusion in the study. To ensure the representativeness of the entire sample of schools (the study did include 7th and 8th graders), each high school in the sample was matched to a number of feeder (i.e. middle schools) schools. The final sample included 134 schools in 80 counties (Pearce and Haynie, 2004; Regnerus and Smith, 2005).

The data collection process for the individual-level data occurred in three stages. First, all students in the 214 selected schools were administered a questionnaire for completion at school. Next, a sub-sample of 200 individuals, stratified within schools by grade and sex, were selected from the larger sample. Of the 200 selected from each school, approximately 80 percent participated in the more detailed Wave I interview, which took place in 1995. Lastly, all individuals that were still enrolled in school were solicited to participate in the Wave I in-home interview.

The impetus for the Add Health study emanated from a Congressional mandate to study the correlates of adolescent health. To this end, the first two waves of Add Health merges panel survey data on individual indicators of well-being (e.g. physical, emotional, social, and economic) with contextual, ecological data (e.g. family, school, neighborhood, peers) for the primary purposes of elucidating the covariates of behavioral/emotional (e.g. delinquency, health) outcomes in young adulthood.

Measures

In order to test the aforementioned hypotheses, the current study utilizes data from Waves I (1994-1995) and II (1995-1996) of the in-home interview, as well as the parental in-home interview. It is the contention of the author that the Add Health data is particularly well suited to offer a rigorous longitudinal examination of the ability of religiosity to mediate the relationship between strain-induced negative affect and deviant coping. This study specifically fills a in a glaring void in this literature (see Jang and Johnson, 2003; 2005; Johnson and Morris, 2008) by providing a longitudinal examination

among a nationally representative population. The following paragraphs provide a general description of the measures/indicators extracted from the Add Health data for purposes of testing the central hypotheses in this research.

Independent Variables

Following the central premises of GST, several sources of strains and stressors are employed in the current study, including: traditional indicators of strain (i.e. the disjunction between aspirations and expectations); suicide attempts/ideation by peers and family members (i.e. the loss of positively valued stimuli); health-related strains (i.e. general health); school-related stressors (argument with teachers/peers); and physical victimization.

While the Add Health data contains many potential indicators to test general strain theory-particularly stressful events and negative relations with others-there is a dearth of measures tapping into *traditional* conceptions of strain (i.e. the disjunction expectations and outcomes). It should also be noted that, as has been the case in previous operationalizations of strain, it is sometimes difficult to differentiate between indicators of GST and other theoretically relevant variables; namely social bonding. In particular, many measures used to test social control theory can also plausibly be construed as indicators of strain; namely the loss of positively valued stimuli (e.g. “adults don’t care for me”, “parents do not care for me”, etc.). Agnew (1992, 2001) explicitly instructs that in order to differentiate GST from social bonding theory, research should employ measurements of GST that primarily revolve around negative relations with others.

Based on the preceding considerations, this study employs a multi-dimensional measure of strain that primarily-although not exclusively-incorporates measures reflecting negative relationships with family, peers (at school), and school officials.

The relevant strain scales, subscales, and indices will be drawn from Wave I of the Add Health survey. The strain measures are hypothesized to be positively related to Wave I negative affect and Wave I delinquency, net of all Wave I conditioning variables and demographic controls. While Agnew (1992; 2001) argues that the effects of strain on delinquency are likely to be contemporaneous, the use of cross-sectional data potentially obscures possible reciprocal effects in the strain/delinquency relationship. That is, time 1 delinquency may have a causal impact on time 2 strain. This concern offers a good defense as to the use of longitudinal data when testing the central tenets of GST; particularly when the time span between waves is relatively brief (Aseltine et al. 2000; Kaufman, 2009). Lastly, in line with Agnew's (1992) original conceptualization, this study will examine the deviance-generating effect of GST by employing numerous measures of strain.

Strain Measures

Failure to Achieve Positively Valued Goals

This component of GST can be traced back to more traditional conceptualizations of anomie and strain (Merton, 1938). Specifically, the central premise that runs through all derivations of classical anomie/strain theory is that strain is the result of a failure to

achieve positively valued goals (i.e. a disjunction between aspirations and expectations, and/or the principle of equity is violated); and when faced with said strain, some individuals are susceptible to deviant coping responses (e.g. innovation, rebellion). To this end, the current study operationalizes this dimension of strain by adapting a measure that focuses on the intersection between aspirations and expectations. In particular, I employ the use of two measures that first asks respondents the extent (1 = “low”, and 5 = “high”) to which they wish to attend college, and subsequently inquires as to the likelihood (1 = “low” to 5 = “high”) that this aspiration will in fact come to fruition. This measure was adopted due to the fact that the failure to achieve long-term career goals may not serve as a major stressor. Borrowing from Mazerolle and Piquero (1998), educational aspirations represent a more proximate career-goal, and any aspirations/expectations disjunction witnessed here is likely to be perceived as particularly stressful. In congruence with Ostrowsky and Messner (2005), a goal discrepancy score will be calculated by subtracting the expectation score from the aspiration score. High scores will reveal that aspirations are going unmet and will therefore be indicative of a high level of strain. Despite the fact that there is empirical precedence for this operationalization strategy, it must be acknowledged that Agnew (1992) did indicate that previous null findings in the strain literature could potentially be attributed to conceptualizing strain in this (aspirations/expectations discrepancy) manner.

Stressful Life Events

Many empirical assessments of GST have conceptualized strain with a measure of negative or stressful life events (Capowich et al. 2001; Eitle, 2002; Eitle and Turner, 2003; Paternoster and Mazerolle, 1994; Sharp et al. 2004; Slocum et al. 2005). An inherent liability with such operationalizations (as is the case in the current research), as incisively noted by Slocum et al. (2005), is that this treatment of strain assumes that all of these life events are stressful (i.e. objective strains) without explicitly asking the individuals to evaluate the unpleasantness of the strain (i.e. subjective strains).

It also necessitates mentioning that the measures of strain used in this study are all referencing different time periods; with some indexing stressful events of the previous month and year, while others ask individuals to reveal stressful events that may have occurred during one's lifetime. Scholars (Eitle, 2002; Eitle and Turner, 2003) have pointed to this issue as being potentially problematic in many tests of GST, given the contemporaneous effects that strain is posited to have no both negative affect and deviance (Agnew, 1992; 2001). Eitle and Turner (2003) note, however, that there is compelling empirical evidence from the field of psychiatry that suggests that major lifetime stressors may have a long duration in terms of the negative emotions/coping resources left in their wake, although the event may have occurred years earlier (Lauer and Lauer, 1991; Kessler and Magee, 1994; Turner and Avison, 1989). While there may be issues with the accurate recall of events that have occurred over an individual's lifetime, given the saliency of these lifetime major events (e.g. physical victimization, pregnancy), I argue, in line with Eitle and Turner (2003), that such events will leave a

lasting impression on an individual. While in full acknowledgement of the preceding concerns, a measure of general health, as well as the potential loss of positively valued stimuli, will be used to represent this salient dimension of strain (see Aseltine et al. 2000 for a similar conceptualization strategy).

Loss of Valued Stimuli

While the Add Health data does not contain a great deal of items that tap into this integral dimension of general strain, there are some potential proxies for this dimension that were incorporated into this study. Specifically, and in line with Kaufman (2009), suicidal behavior (both attempts and completed suicides in the year preceding the interview) by close friends and family members represents the threat of losing something positively valued. Suicide attempts and completed suicides were dummy-coded for both friends and family members. Individual items were summed to form a summated peer/family suicidal behavior scale, with scores ranging from 0 to 4. Due to the fact that the overwhelming majority of the sample did not have a close friend or family member complete a suicide, the scale was collapsed to a dummy variable (0 = “did not have a close friend or family member attempt/complete suicide”, 1 = “had at least one friend or family member attempt/complete suicide). After all relevant recodes, approximately 20 percent of the sample had a friend or family member either attempt or complete a suicide in the year preceding the interview.

Health-Related Strain

One of the unique contributions of this study to the GST paradigm is the inclusion of general health as a consequential source of strain. With relatively few exceptions (see Jang, 2007), tests of GST generally do not include poor-health as a deviance-inducing strain. The Add Health data ostensibly offers the most comprehensive examination of the impact that adolescent health-related issues have on a host of behavioral outcomes. Based on this methodological advantage, the current project links a number of health-related strains (i.e. general emotional and physical health) to a host of deleterious behavioral outcomes (e.g. delinquency, suicide ideation, drug/alcohol use) through the intervening variable of negative emotions.

It is argued in this study that individuals that are in poor general health will experience elevated levels of strain-generated negative affect; in particular depressive symptoms. To this end, I employ the use of a 19-item scale that represents respondents' general health. In particular, respondents indicated the extent (0 = "never", 4 = "about every day") to which they experienced a range of negative health outcomes (e.g. "feeling tired for no reason", "frequent headaches", "hot all over"). Items are positively coded to ensure that high scores are indicative of elevated levels of health-related strains. All items were summed and then averaged in order to obtain a composite measure of general health. The scale demonstrates more than sufficient reliability, with a Cronbach's alpha of .83. As alluded to previously, it must be acknowledged that there is an inherent risk in inferring that *objective* strains (e.g. potential loss of a family member, poor health) will be *subjectively* (i.e. the individual may not have shared a close relationship with his

parents/friends) evaluated as strain-inducing. Unfortunately, as is the case with many measures of strain within the Add Health, the aforementioned indicators are objective measures of strain, and there are generally no follow-up questions regarding how this pregnancy was evaluated by the individual.

Negative Relations with Others

This operationalization of strain pertains to social relationships with other individuals-primarily peers and teachers-that are found to be aversive (Agnew, 1992; 2001). Additionally, a separate physical victimization scale will be incorporated to serve as a representation of this facet of strain. It must again be acknowledged that an inherent weakness of this operationalization is that this dimension will principally be comprised of objective measures of strain; in which the researcher infers that a given act is stressful, without explicitly asking the individual experiencing the event.

Specifically, Add Health participants were asked an array questions about their satisfaction with their social relationships (e.g. teachers, peers), and experiences with physical victimization. I specifically operationalized this consequential dimension of strain by incorporating a school-based measure of strain, as well as a measure of physical victimization.

School-Related Strain

Respondents were asked to indicate the degree of strain experienced while at school; particularly with teachers and students. In particular, respondents were asked if

they had problems getting along with students and teachers, as well as if teachers at their school treated students fairly. Lastly, individuals were asked if they felt safe while at school. All items were measured in a Likert-Scale format, with higher scores representing elevated levels of strain. Individual indicators were summed and averaged to compute a composite measure of school-related strain ($\alpha = .59$).

Victimization

Among the newly minted sources of strain that are hypothesized to be related to delinquency, perhaps physical victimization has received the most support (Agnew, 2001; Agnew et al. 2002; Hutchinson-Wallace et al. 2005; Ostrowsky and Messner, 2005; Slocum et al. 2005). Agnew (2001) posits that experienced and vicarious physical victimization serves as a very intense form of strain that subsequently places an abnormally elevated amount of pressure on the victim to take corrective measures (e.g. crime) to the problem. Consequently, in the tests that have juxtaposed physical victimization with other sources of strain, experienced (but not necessarily vicarious) physical or criminal victimization has been found to be among the most robust covariates of criminal adaptations to strain (Agnew, 2002; Ostrowsky and Messner, 2005).

This study incorporates the use of a 4-item measure of experienced/vicarious physical victimization, identical to the one used by Kaufman (2009). Add Health participants were specifically asked to indicate the extent to which they had (0 = “never”, 2 = “more than once”) experienced direct (e.g. “someone pulled a gun or knife on you”, “someone shot you”, “someone stabbed you”, “you were jumped”) physical victimization

in the year preceding the Wave I interview. Due to the fact that the vast majority of adolescents (80 percent) had not experienced any form of physical victimization, the individual indicators were dichotomized. Finally, the four items were summed to generate an overall range (from 0 to 4) of physical victimization in the year preceding the Wave I interview. As indicated by Kaufman, (2009), a problem with this particular scale is that it does not contain measures of physical victimization (i.e. sexual assault, child abuse) that are primarily experienced by females. This liability seriously compromises the ability to examine gendered hypotheses, although the Add Health is more than sufficient in examining the central tenets of GST across gender. The final additive scale has a reliability coefficient of .59.

Mediating Variables

The GST literature, beginning with Agnew's original formulation of GST, almost uniformly asserts that the effect of strain on deviance is more or less contingent on the mediating effect of negative emotions (Agnew, 1992; Capowich et al. 2001; Hay and Evans, 2003; Ostrowsky and Messner, 2005; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004). In other words, the strain/deviance relationship is indirect-largely operating through the more proximate criminogenic effect of negative affective states. Specifically, the experience of strain engenders an array of negative emotions (including anger, anxiety, depression), which exert pressure on the individual to correct the situation. It stands that many individuals, when faced with strain-induced negative affect, turn to deviant coping strategies for purposes of assuaging said negative emotions-

especially when these negative emotions are not accompanied by protective conditioning variables (i.e. social support, self-esteem, and religiosity).

Anger

As indicated earlier, anger occupies a central position in the relationship between strain and delinquency. Agnew posits that strain-induced anger has a tendency to exacerbate the level of perceived injury experienced by the individual, and in turn creates a desire to seek revenge. For this reason, anger has a strong link to delinquency—particularly violent delinquency.

It warrants mentioning that a fundamental limitation of the current study is that there are no direct indicators of anger (either situational or trait-based) or guilt in the Add Health data. Given this limitation, I have made use of a proxy measure for anger, extracted from the parental interview that occurred concurrently with the Wave I interview. Parents were specifically asked to indicate if their child had a bad temper (0 = No, 1 = Yes). While not an ideal measure, there is precedent for using this proxy (see Kaufman, 2009). Moreover, this measurement of anger is identical to the one employed by Hagan and Foster (2004), and has been substantiated by a host of scholars (see Moffitt, Caspi, Rutter, and Silva, 2001; Piquero, MacIntosh, and Hickman, 2000). Despite the preceding justifications, it must be acknowledged that the use of an external measure of anger is potentially problematic, as it could be the case that *parental* perceptions of anger are not entirely accurate.

Another problem with this measure of anger is the *type* of anger that is included in the Add Health. As noted earlier, within the GST literature, an emerging area of research concerns the juxtaposition of situational and trait-based anger (see Mazerolle and Piquero, 1998). Consequently, the parental indicator of childhood temper represents more of a trait-based conceptualization of anger. While a measure of situational-based anger appears to be more congruent with the central premises of GST, I follow the logic of others (Mazerolle and Piquero, 1998) by assuming that individuals that are high in trait-based anger would be more likely to exhibit anger in response to a myriad of situations.

Depression

While perhaps strain-induced anger has the strongest impact on serious deviant outcomes (e.g. violence), the GST literature (Broidy, 2001; Broidy and Agnew, 1997) consistently demonstrates a link between non-angry negative emotions (i.e. depression, anxiety, and guilt) and deviance. While Agnew proposes that all forms of strain-induced negative affect place pressure on individuals to engage in corrective action, not all forms of negative affect are equally likely to induce this pressure. In particular, many researchers contend that non-anger related negative emotions are specifically linked to more *inner-directed* deviance (e.g. eating disorders, suicide ideation, drug/alcohol use) than outer-directed violent delinquency and general aggression (Broidy, 2001; Broidy and Agnew 1997; Hay, 2003; Jang, 2007; Sharp et al. 2001, 2004); and this largely accounts for the gender gap in offending as well as gender-specific forms of deviance.

Before discussing the specific operationalization procedures used to represent depression, a full elaboration on the time order of this variable is in order. This study employs the use of Wave I mediating variables, similar to Kaufman (2009). While this would potentially represent a problem when conducting longitudinal analyses, due to the fact that strain is presumably antecedent to negative emotions, this is an appropriate procedure when testing GST, given the fact that the effects of strain on negative emotions are expected to be relatively temporary (Agnew, 1992; Brezina, 1996; Kaufman, 2009). Due to the manner in which those items were presented to respondents (the experience of depressive symptoms in the previous *seven days*), it can logically be inferred that most of the strain items- which generally reference things that have transpired in the previous month/year-are temporally antecedent to affective states (Kaufman, 2009).

The primary measure of depression in the Add Health is a 19-item scale that is extracted from the Center for Epidemiologic Studies Depression Scale (Radloff, 1977). Specifically, a four-item Likert-scale, ranging from 0 “never” to 3 “most or all the time”, assesses the extent to which respondents had experienced a wide array of depressive symptoms during the 7 days preceding the interview. Similar to the approach adopted by Brown (2006), the 19 items were summed into a proximate index of depression, and then averaged, with scores ranging from 0 to 3. Lastly, the scale receives a Cronbach’s alpha coefficient of .87, demonstrating strong reliability.

Conditioning Effects

From the inception of GST, scholars have reiterated that the relationship between strain and delinquency is not deterministic. In particular, research in the GST tradition has consistently revealed that the relationship between strain and crime is not only contingent on the mediating effects of negative emotions, but also on the moderating effects of various “conditioning” (e.g. self-control, social control, differential association, religiosity) variables (Agnew and White, 1992; Baron, 2006; Brody and Agnew, 1997; Hay and Evans, 2006; Hoffman and Miller, 1998; Jang, 2007; Jang and Johnson, 2003, 2005; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004). As previously articulated, the strain/crime relationship is indirect, with strain impacting deviance through the intervening variable of negative emotions. Conversely, conditioning variables interact with strain to moderate or “condition” the relationship between strain and crime. While some conditioning variables (e.g. self-control, differential association) amplify the strain/crime relationship, others (e.g. social control, religiosity) have been found to inhibit deviance (Jang and Johnson, 2003, 2005; Piquero and Sealock, 2004). Simply put, moderating or conditioning variables, relative to their respective levels, impact the *direction* of the strain/crime relationship.

Before further discussing the operationalization strategy for all conditioning factors, a more detailed differentiation between the two types of conditioning factors is warranted. Internal or individual-level, conditioning factors are those primarily residing within the individual (e.g. deviant attitudes, self-esteem, self-efficacy) that serve to either suppress or aggravate the strain/crime relationship. Conversely, external conditioning

factors (e.g. most forms of religiosity, social control, social support, deviant peers) are those that lie outside the individual and moderate the relationship between strain, negative emotions, and deviance.

The two most common internal conditioning factors in the GST literature are self-esteem and self-efficacy (see Agnew and White, 1992; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004). The prevailing logic is that these internal conditioning effects serve to protect the individual from the criminogenic effects of strain-induced negative affect. It must be noted that due to the manner in which self-efficacy is conceptualized within GST (ability/willingness to use birth control during an impassioned moment), and the low reliability (below .5) of the scale, this study omits a measure of self-efficacy from all analyses. Conversely, the Add Health data does contain a number of measures that tap individual levels of self-esteem, and attain significant standards of reliability.

Self-Esteem

The role that self-esteem plays in the GST framework, similarly to self-efficacy, is complex and may be convoluted. While many (see Agnew 1992; Agnew and White, 1992) contend that the individual high in self-esteem will be protected from the crime-generating properties of strain, there is a contention that self-esteem actually has an aggravating effect on the strain/crime link (Agnew et al 2002; Baron, 2004).

The most commonly used operationalization of self-esteem emanates from the 10-item Rosenberg self-esteem scale. Given that an explicit measure of self-esteem cannot

be found in the Add Health data, the current study employs a number of measures that will serve as proxies for self-esteem. Specifically, respondent's average score on four questions was used to create the self-esteem scale. In the four-item scale, survey respondents were asked the extent to which they 1 "Strongly Agreed", 2 "Agreed", 3 "neither agreed or disagreed", 4 "disagreed", or 5 "strongly disagreed" to the following items: "You have a lot of good qualities"; "you have a lot to be proud of"; "you like yourself just the way you are"; and "you feel like you are doing everything just about right. Items were recoded to ensure high scores being indicative of high self-esteem. The overall reliability of the scale ($\alpha = .79$) was sufficient.

Deviant Peers

General Strain Theory posits that some conditioning effects have crime-inhibiting capacities, while some serve to aggravate the relationship between strain and crime (Agnew, 1992, 2001). Research in this tradition has generally revealed that deviant peers have an aggravating effect on the strain/crime relationship. In other words, the individual experiencing strain-induced negative emotions is much more likely to adopt deviant coping strategies when he or she is in the company of deviant peers (Agnew, 2001; Baron 2004; 2006). While it must be acknowledged that the Add Health does not contain a comprehensive measure of differential association/social learning, a serviceable proxy is present: association with peers that use alcohol/drugs. This social learning measure specifically revolves around deviant activities of the respondent's three closest peers. Specifically, respondents are asked as to how many of their closest friends smoke at least

one cigarette a day, smoke marijuana more than once a month, and drink alcohol at least once a month. Response categories ranged from 0 (“zero friends”) to 3 (“three friends”). Items were summed, with scores ranging from 0 to 9, in order to create a summated peer-deviance scale. The scale exhibits sufficient reliability (Cronbach’s alpha = .75) and has been used in other criminological studies (Beaver, 2008; Bellair, Roscigno, and McNulty, 2003; Kaufman, 2009).

Social Support

Social support-or the feeling a person has that he or she is loved, valued, and cared for, and is embedded in a network of emotional ties-occupies an essential position in the GST framework as an external conditioning factor to strain (Agnew, 1992; Capowich et al. 2001; Jang, 2007; Jang and Johnson, 2005; Jang and Lyons 2006; Kaufman, 2009; Paternoster and Mazerolle 1994; Robbers, 2004; Sharp et al. 2005). The research literature appears to consistently validate the position that individuals that are high in social support are ostensibly shielded from the criminogenic effects of strain (Broidy and Agnew, 1997; Hay 2003; Mazerolle, Burton, Cullen, Evans, and Payne, 2000; Robbers, 2004).

It must be acknowledged at the outset that the social support items appear very similar to the items used to operationalize social control (see below). Despite this apparent similarity between the two measures, this measure of social support is intended to assess the amount of emotional support a respondent receives from others, not necessarily how he or she evaluates said support (for instance, does the support endear

the respondent to others?). It is the author's contention that the preceding statement offers a justification for the distinct treatment of these two constructs for purposes of this study-although the similarity between the two must be taken into consideration (see Kaufman, 2009). Seven items were extracted from the Add Health for purposes of representing social support; a conceptualization that is identical to previous assessments of GST that also employed the use of Add Health data (Kaufman, 2009). Respondents were asked questions ("How much do you feel adults/teachers/parents/peers care about you?") about the level of emotional support and understanding received from others. Responses ranged from 1 ("not at all") to 5 ("very much"), and were positively coded as to where high scores were indicative of high levels of social support. Lastly, the scale demonstrated sound reliability, with a Cronbach's alpha of .78.

Social Control

The role of Hirschi's social control theory within the GST framework has been somewhat varied. Agnew, in his original formulation of GST, juxtaposed GST and social bonding theory as competing independent explanations of criminal behavior (Agnew 1992; Agnew and White, 1992). Paternoster and Mazerolle (1994) were among the first to suggest that there is a potential interaction between GST and social control, and Agnew later reformulated GST by postulating that strain is more likely to lead to deviant coping mechanisms when social control is low (Agnew et al. 2001; 2002). In other words, individuals that experience strains, particularly persistent strains, are likely to experience a reduction in social control as their contacts with conventional society-

particularly after deviant coping strategies have been employed-begin to dissolve (Baron, 2004). Therefore, not only does the strain/crime relationship appear to be more potent when accompanied by low levels of social control (Agnew et al. 2001), but strain may be negatively related to social control.

Numerous indicators of social control are present in the Add Health survey, and four separate scales (parental attachment, parental involvement, school attachment, school involvement) were formulated in order to represent social control (see Appendix for a comprehensive list of social control items and response categories). The measures of social control used in this study are largely consistent with prior sociological research that has also used Add health data in their assessments (see Brown, 2006; Harris, Duncan, Boisjoly, 2002; Hahm, Lafiff, and Guterman, 2004; Kaufman, 2009; and Guo, Cai, and Roettger, 2008). This study incorporates the use of four, Wave I indicators of social control: school attachment, school commitment, parental attachment, and parental involvement. A detailed discussion of these elements is presented below.

Perhaps the most important element of the social bond, for adolescents, is parental attachment (Aseltine et al. 2000; Hay and Evans, 2006). In order to capture this important dimension of the social bond, a nine-item scale was created, in which respondents indicated the degree (1 = Strongly Disagree, 5 = Strongly Agree) of attachment to their mother and father (e.g. “most of the time your mother/father is warm and loving towards you”, “you are satisfied with the way you communicate with your mother/father”, “you are satisfied with the relationship you have with your mother/father”). Additionally, two questions asked the respondent to only reference the

attachment to the mother (“when you do something wrong, your mother explains why it was wrong”, “your mother encourages you to be independent”), while the final item-used in other studies using Add Health data (see Guo et al. 2008)-asked the respondent to indicate on how many evenings was at least one parent present when the respondent had dinner (1 = Never, to 5 = 7 days). This scale has been used in previous empirical studies that have attempted to extract a measure of parental health from the Add Health (Hahm et al. 2003; Knoester and Haynie, 2005). A potential liability with this measure is that for a sizeable proportion of the respondents (approximately 29 percent), there were missing data-particularly in reference to questions about paternal attachment (i.e. the respondent did not reside with his/her father). Similar to Brown (2006), these individuals were categorized as having a weak attachment to their mother or father. Due to the fact that the item was highly skewed, with most of the respondents indicating a strong or very strong attachment to either their mother (approximately 80 percent) or father (approximately 57 percent), individual items were recoded as a dichotomous variable: low closeness (scores of less than 3), and high closeness (scores of 4 and 5). This procedure mirrors that used by other empirical studies using parental attachment measures in the Add Health (Brown, 2006). The scale demonstrates strong reliability, with a Cronbach’s alpha coefficient of .83.

The extent to which parents and children are jointly involved in pro-social activities is yet another prominent element of the social bond, and one that has been heavily used in the GST literature (Hoffman and Miller, 1998; Paternoster and Mazerolle, 1994). Respondents were asked to indicate whether they had engaged (0/1, with 1 =

“Yes”) in five pro-social behaviors (gone shopping, played a sport, gone to a religious service, worked on a school project, gone to a museum) with each parent in the four weeks prior to the Wave I interview. Answers to the ten items were summed, with a range of 0-10. This additive scale has been previously used in the sociological literature (Knoester and Haynie, 2005).

The school attachment measure-similar to those used in other studies in the GST literature (Agnew and White, 1992; Kaufman, 2009; Mazerolle et al. 2000; Thaxton and Agnew, 2004)-is represented by a three-item scale that assesses individual attachment to school (e.g. “do you feel close to people at school”; “do you feel like you belong at your school”, “are you happy to be at your school”). Responses to the items were on a five-item Likert scale format; ranging from 1 = “not at all”, to 5 = “very much”. Items were coded in a fashion as to where high scores represented high levels of school attachment. All responses were summed and then averaged for purposes of presenting a composite measure of the intensity of one’s attachment to school (Cronbach’s alpha of .77).

A pertinent indicator of an individual’s bond to school is student grades. Hirschi (1969) indicated that school commitment-as evidenced by one’s performance-goes beyond mere attachment in cementing an individual’s bond to the institution of education. In line with previous work (Hoffman and Miller, 1998; Kaufman, 2009; Thaxton and Agnew, 2004), the average of individual grades across at least two (respondents possibly could have only taken a sample of the subjects) of the following four subjects: English, math, history, and science.

Religiosity

While the GST literature has offered substantiating evidence for the utility of both internal (e.g. self-efficacy, self-control, self-esteem) and external (e.g. social support/social control) conditioning factors, there has only been marginal attention paid to examining the ability of religiosity to serve as an external conditioning effect to strain-induced negative affect (Jang and Johnson 2003, 2005; Johnson and Morris, 2008). Moreover, the few studies that have explicitly attempted to offer an assessment of this premise have suffered from cross-sectional, non-representative data (see Jang and Johnson, 2003). The current study offers the most comprehensive, representative analysis of the potential of religiosity to condition the strain/delinquency relationship by employing the use of a more representative, longitudinal sample.

The limitations of early, unidimensional operationalizations of religiosity have certainly been well documented (see Burkett and White, 1974 for a critique, and Jang and Johnson, 2003 for an update). Specifically, the early measures of religiosity have been narrow and consisted of a measure of church attendance; omitting salient dimensions of the construct. More contemporary research has championed the position of incorporating multifaceted measures when studying religiosity. In a recent review of the religiosity/delinquency literature, Johnson, De Li, Larson, and McCullough (2000) found that articles employing a more rigorous research methodology (incorporating multidimensional indicators of religiosity) were more likely to report a significant, inverse relationship between religiosity and delinquency (all nine studies using this specification found confirmatory evidence). Therefore, in concert with modern

methodological developments (Evans et al. 1995, 1996; Johnson et al. 2000; Jang and Johnson, 2003), multiple-item indicators will be employed to represent dimensions of religiosity.

Personal levels of religiosity, extracted from Wave I of the Add Health, will consist of the following dimensions that will be used to form religiosity subscales (where applicable): religious participation (both organizational and non-organizational), religious salience, and fundamentalist or “hellfire” beliefs. These dimensions of religiosity are proposed to capture many important commitment, attachment, and belief elements (Evans et al. 1995; 1996; Jang and Johnson, 2003). It is important to note while the religiosity indicators in the Add Health data do not perfectly capture the measures employed by Jang and Johnson (2003, 2005), it is the contention of the author that this operationalization of religiosity approximates their measures and should be more than sufficient in revealing any conditioning/moderating effects of religiosity in the GST framework.

The data collected on religious involvement were obtained by having respondents either report on the frequency of church attendance, church activities, (e.g. youth groups, Bible classes, choir) or non-organizational religious involvement (i.e. prayer). For the organizational component, respondents were specifically asked to indicate the extent to which they attended church services/functions (1= once a week or more; 2= once a month or more; 3= less than once a month, 4 =never). Regarding the measure of non-organizational religious commitment (i.e. prayer), respondents were asked to indicate the frequency of their prayer over the past month (1= “at least once a day”, 2 “at least once a week”, 3”at least once a month”, 4 “less than once a month”, or 5 “never”). The four

items were recoded in a manner to ensure high scores being indicative of higher levels of religious involvement. Due to the fact that these three items were measured on a different scale, individual indicators of religious participation were standardized, and then averaged for purposes of generating a composite measure of religious participation. Item reliability analysis reveal that the items cluster together (Cronbach's alpha = .80).

Religious salience indicates the importance of religion to the individual as a source of identity, support, and a guide (Evans et al. 1995). There is only one item (how important is religion to you?) within the Add Health that captures this crucial dimension of religiosity. Response categories were recoded so that high scores (4 = Very Important) indicated elevated levels of the construct.

Religious fundamentalism, or "hellfire" beliefs, indicates the extent to which individuals endorse a belief in Biblical inerrancy, and hold a view of God as a judge who dispenses retribution to sinners. The Add Health data only contains one indicator of religious fundamentalism: "Do you agree or disagree that the sacred scriptures of your religion are the word of God and are completely without any mistakes". Respondents were asked to indicate the degree to which they 1= Agreed; 2= disagreed; or 3=believed that religion doesn't have sacred scriptures. Items were recoded to ensure high scores are consistent with heightened fundamentalism.

Dependent Variables

Delinquency

Multiple-item measures of Wave II delinquency and analogous items were used in this study (see Appendix for an exhaustive list of all scales and indices). As alluded to in the preceding chapter, Wave II delinquency is hypothesized to be a result of Wave I strain and conditioning variables, as well as Wave I strain-induced negative affect (net of Wave I delinquency). The central outcome variable in the GST framework is in fact crime/delinquency (see Agnew, 1992; Agnew et al. 2001; 2002; Agnew and White, 1992; Broidy, 2001; Brezina, 1996; Paternoster and Mazerolle, 1994), although by virtue of its general contention, GST is also positioned to account for a myriad of deviant outcomes (e.g. eating disorders, suicide ideation, police misconduct), some of which being non-criminal (Arter 2008; Sharp et al. 2001; 2005; Walls et al. 2006). In his original statement on the matter, Agnew (1992) posits that for the strain-induced individual, deviance is a possible, but not entirely inevitable, response. From this perspective, Agnew views crime/deviance as a means of assuaging the pressure placed on an individual by strain-induced negative emotions. Specifically, violent delinquency is more likely to alleviate strain-induced anger, while non-violent delinquency and deviance are more likely to moderate the relationship between strain and inner-directed negative emotions (e.g. depression, guilt, anxiety). Therefore, deviance is the chief outcome variable in the GST framework, and a more thorough description of the measures used to represent deviance is provided below.

Violent Delinquency

Agnew clearly positions violence/aggression as a plausible coping strategy to strain-induced anger. The Add Health data contains numerous items representing both violent delinquency as well as general aggression. I included a 7-item additive scale for purposes of canvassing the effect of strain-induced negative emotions on violence. Respondents were asked of their participation in myriad forms of violent behavior during the year preceding the Wave II interview, including: using or threatening to use a weapon to get something from someone, taking part in a group fight, getting into a serious physical fight, using a weapon during a fight, hurting someone badly enough to require medical attention, pulling a gun or knife on someone, shooting/stabbing someone. Despite the fact that the majority of the seven items represent violent delinquency, there are a few indicators of non-delinquent aggression (e.g. gotten into a serious physical fight), which should still fit squarely in the explanatory prowess of a general theory of crime, like GST. The first five items were measured on a four-point Likert scale, with responses ranging from 0 = “Never”, to 3 = “Five or More Times”, and the last two items on a three-point Likert-scale, with responses ranging from 0 = “Never”, to 2 = “More than Once”. Due to the fact that the variables used a different metric, along with the rarity of participating in violent acts, each question was dichotomized, with 1 = “have committed the act in the previous year”. The seven recoded items were then summed to create an additive scale intended to assess individual involvement in violent behaviors (range from 0 to 7). This methodological procedure comes highly recommended in the criminological literature (see Hindelang, Hirschi, and Weiss, 1981), at least partially due

to the fact that serious and non-serious violence items are given equal weight, and one can only attain high scores on the scale by becoming involved with serious forms of violence (Osgood, McMorris, and Potenza, 2002). Lastly, reliability analysis yield a more than sufficient result, with a Cronbach's alpha of .75.

Drug Offenses

Research has supported the notion that drug use is explicitly linked to strain-induced negative affect other than anger (Eitle, 2002). Specifically, individuals that experience anger in reaction to strain are more likely to employ a violent, other-based coping strategy, such as violence (see Jang and Johnson, 2003). Conversely, individuals that experience other forms of negative emotions (e.g. depression, anxiety) are more inclined to resort to non-aggressive coping strategies, such as drug use (Broidy, 2001; Broidy and Agnew, 1997; Eitle, 2002; Jang and Johnson, 2003.)

Multiple item indicators of drug use were employed in this study. It is the contention of the author that an incidence measure captures key variation in the dependent variable, and consequently will delineate important differences in the outcomes of individuals experiencing varying levels of strain. To this end, a 4-item, additive scale of the incidence of drug use was included for use in this study. Specifically, respondents were asked the extent to which they had used various drugs (e.g. marijuana, cocaine, inhalants, other drugs) in the 30 days prior to the Wave II interview. Due to the fact that all four measures suffer from being positively skewed, each individual item was recoded to indicate whether respondents had used any (0/1) of the aforementioned drugs on a weekly

basis in the 30 days preceding the Wave II interview, and then summed into an additive scale of weekly drug use. Finally, this additive scale was dichotomized to capture weekly use of *any* drug in the previous 30 days (0/1).

Frequent Alcohol Use

Research has linked various forms of strain and negative affect (anxiety and depression in particular) to various public order and status offenses; including DUI and intentions to DUI (Mazerolle et al. 2003). A measure of weekly, heavy drinking was created for purposes of representing this element of deviance. In particular, individuals were asked to indicate the extent to which they drank alcohol in the year preceding the Wave II interview. I dichotomized this measure to assess frequent drinking (0/1 = drank at least one or two days a week). Additionally, I assessed heavy drinking by dummy-coding the measure of frequency of drinking at least five or more drinks at a time (0/1 = at least once a week). The two dummy variables were then added to generate a final measure of frequent, heavy drinking; ranging from 0 to 2 (drank at least five or more drinks once or twice a week). This measure is included in the analyses for purposes of assessing the “general” capacity of GST. If GST is to exert general effects it should be able to explain behaviors that are illegal because of one’s status (i.e. age).

While not included in the central hypotheses, this study will provide ancillary analyses of the strain/negative affect/religiosity/deviance relationship across different types of delinquency. More specifically, it is hypothesized that religiosity will serve as a particularly robust buffer to strain-induced negative emotions for *ascetic* delinquency.

Briefly, ascetic delinquency is encapsulated by those offenses for which there is some degree of moral ambiguity in the secular community concerning the wrongfulness of the act. Many of these so-called “victimless offenses” (e.g. prostitution, alcohol use, minor drug use, prostitution, gambling) are viewed as being relatively benign in the secular community and only the religiously inclined are likely to demonize such activities. It therefore follows that the crime-buffering impact of religiosity may be more pronounced when considering acts viewed as relatively innocuous in secular society. It is hypothesized that the effects of religiosity will be more robust when considering ascetic offenses.

Analogous Measures of Deviance

Suicide Ideation

Part of the appeal of “general” theories of crime is their capacity to account for behaviors that, while similar or analogous to crime, are not technically criminal (see Gottfredson and Hirschi, 1990). As the popularity of GST began to increase, a plethora of empirical studies attempted to examine the ability of the theory to account for such “analogous” behaviors, including suicide (Sharp et al. 2003; 2005; Walls et al. 2007). While attempting suicide is in fact illegal, suicidal thoughts lie outside the jurisdiction of crime. At least one study in the GST literature has linked strain and negative emotions to suicide ideation (Walls et al. 2007; although Broidy and Agnew 1997 allude to the connection). Walls and colleagues (2007) find that strain and negative affect have potent

affects on both suicidal ideation and attempted suicide among a sample of Native American youth. Suicide and suicide ideation are included in the current research and are presumed to be significantly and positively related to strain-induced negative affect (depression and anxiety in particular). All suicide measures will be positively coded, with high scores suggesting a high proclivity to either think about or attempt suicide.

Suicide ideation is represented with one dichotomous variable: “In the past 12 months did you ever seriously think about committing suicide?” Additionally, an ordinal- level measure was used to represent attempted suicide. Specifically, respondents were asked how many times they had actually attempted suicide in the year prior to the Wave I interview; with response categories ranging from 0 “Never” to 4 “6 or more times”. Due to the fact that very few individuals had ever attempted suicide, and in line with previous studies in the area (Kaufman, 2009), I used the more commonly occurring suicide ideation variable to represent this form of deviant behavior. Suicide ideation is positioned in the current study as a potential reaction to strain-induced negative affect, particularly when particular forms of strain (e.g. poor health; possible loss of positively valued stimuli) evoke inner-directed forms of negative affect (e.g. depression).

Control Variables

Demographic Variables

Consistent with other empirical assessments of GST-in particular, those that have incorporated the use of Add Health (Kaufman, 2009)- a series of common demographic

variables (age, race, gender, proxies for social class) served as general control variables in this study. Age, coded in years, ranged from 11 to 23, while sex was operationalized as a dichotomous variable (Female =2). To represent race, a series of dummy variables (Latino, Black, American Indian, Asian, other) were created, with white serving as the reference group. Additionally, family structure (0 = two parents, 1 = one parent), mother's education (1= less than high school, 5 = some graduate/professional school), and resident mother/father (0 = yes, 1 = no) receiving public assistance were used as relevant proxies for the socio-economic status of respondents. Slightly over half (approximately 53 percent) of survey respondents resided in a two-biological parent household, and approximately ten percent of individuals had at least one resident parent that received public assistance. These general controls were used by Kaufman (2009), in her analysis of gendered responses to serious strain.

Sex and race are hypothesized to have particularly salient effects on the GST/crime relationship, as evidenced by previous work in this area (Broidy and Agnew, 1997; Eitle and Turner, 2003; Jang, 2007; Jang and Johnson, 2003; 2005; Jang and Lyons, 2006). The inclusion of the measures will allow for the examination of hypotheses central to the current research such.

Year-One Deviance

Lastly, and in consonance with previous longitudinal tests of GST (Asseltine et al. 2003, Kaufman, 2009;), Wave I measures of delinquency were included for purposes of serving as a control variable. Specifically, the use of longitudinal data allows us to assess

the ordering of the relevant variables. To this logical end, Wave II delinquency and Wave I strain will be regressed on Wave I delinquency for purposes of ensuring the causal ordering occurs in a manner consistent with the hypotheses. In order for the hypotheses to be valid, strain must be found to exert an independent effect on Wave II delinquency. If Wave I delinquency exerts a strong significant relationship on either Wave I strain or Wave II delinquency, all causal inferences made in the hypotheses would be rendered null and void.

Missing Values

This project handled missing values in a series of deletions and imputations that are described in some detail below. By design, a considerable proportion of the sample (high-school seniors) was omitted from the Wave II survey; an omission that significantly reduces the Wave I sample (from an N of 20,774 to 14,738). The sample was further reduced after the deletion of all cases that contained missing items for any and all dependent and demographic control variables. This iteration reduced the sample size to slightly below 11,000 respondents. In order to maximize the preservation of cases, the last step in handling missing values involved a linear interpolation procedure (Allison, 2002). Essentially, data was first sorted based on relevant demographic variables (race, proxies for class standing, gender), followed by the imputation of missing values based on the performance of non-missing data of nearby points. While not ideal, this procedure ensures that the imputed values are based on the linear effects of key demographic variables on the variables of interest (independent and conditioning variables); which is

problematic with mean replacement. The missing values that accrued with each iteration reduced the sample size to 10,798. After taking into consideration sample weights, the final sample size for the current study is 10,087.

Analytical Strategy

Borrowing from prior studies within the GST framework (Jang, 2007; Jang and Johnson, 2003, 2005; Kaufman, 2009; Sharp et al. 2001, 2005) multivariate analyses used in this research follow the inherent logic of GST. In other words, all analyses are conducted in the following order: strain/negative affect; strain/delinquency; strain/negative affect/conditioning variables/delinquency. In order to handle all of the surveying complexities of the Add Health, all multivariate analyses were performed using the survey analyses procedure within STATA 9.2. This method allows for the proper handling of the clustered nature of the Add Health, and offers a methodological improvement over other statistical programming software by reducing the potential for underestimated standard errors (see Johnson and Morris, 2008). Survey corrected logistic regression was employed for regressing anger on strain, controls, and conditioning variables. Likewise the same procedure was used to regress drug use, as well as suicide ideation, on all controls, strain, and conditioning variables. Survey-corrected OLS regression analyses were used when predicting the correlates of depressive symptoms. Lastly, for purposes of handling rare-event count variables (e.g. delinquency), negative binomial regression was employed when regressing violent behavior and frequent alcohol use on all independent, moderating, and mediating variables. Effects of all independent,

moderating, and mediating variables were deemed statistically significant when $p < .05$. All analyses were weighted due to their unequal probabilities of selection.

Descriptive Statistics

Descriptive statistics were computed for all independent, control (both theoretical and demographic), conditioning and dependent variables. Means, standard deviations, as well as the range of responses to all variables are presented in Tables 4.1-4.3.

Demographic Variables

The sample used for this study marginally over-represents females (52.3 percent), and has an average age of slightly over 16. As indicated in Table 4.1, while the majority of survey respondents were white (67 percent), it warrants mentioning that Blacks (20.4 percent) and Hispanics (15.9 percent) are substantially over-represented in the Add Health data. After employing the use of weights that specifically address this unequal probability of selection, Blacks represented 14 percent of the sample, and Hispanics 11 percent. It is also worth mentioning that only a minority of survey participants (9.4 percent) had at least one parent that had received public assistance in the year preceding the survey. Additionally, over 70 percent of survey respondents resided in a two-parent household, and approximately 60 percent of the adolescents lived with both biological parents. As clearly indicated in Table 4.1, there is few gender differences in relation to the key demographic variables used in this study.

Negative Affect

As indicated in Table 4.2, while parents were slightly more likely to report their sons as having a bad temper (.30 versus .29 for females), this marginal difference fails to attain statistical significance. While this finding may initially appear to be incongruent with the central tenets of GST, Broidy and Agnew (1997) contend that the gender differences in anger are likely minimal, and the crime-generating effects of *female* anger are potentially attenuated by the concurrent experience of strain-induced depressive symptoms. To this end, females report a statistically-significant, elevated rate of depression relative to their male counterparts (.61 versus .52). This finding is consistent with previous research in GST, and the mental health and stress literature (Broidy and Agnew, 1997; Gove, 1978; Jang, 2007; Jang and Johnson, 2003, 2005; Kaufman, 2009; Mirowsky and Ross, 1995).

Strain

As indicated earlier, a litany of potential stressors were recruited to represent key features of Agnew's General Strain Theory. While, overall, it appears that the majority of sample participants did not experience heightened levels of strain, there are some prominent gender differences in the experience of strain. Most notably, males are 2.4 (.26 for Males, .11 for females) more likely to be victimized by violence when compared to females. While this finding is consistent with previous research in the area of GST (see Kaufman, 2009), it represents the greatest gender disparity in terms of the experience

Table 4.1 Descriptive Statistics for Demographic & Control Variables.

Variable	Range	Full Sample (N = 10,087)		Males (N = 4, 813)		Females (N = 5, 274)	
		Mean	SD	Mean	SD	Mean	SD
Demographics							
Age (11-21)	11-21	16.11	1.60	16.22	1.60	16.01	1.59
White	0-1	.67	.47	.68	.47	.67	.47
Black	0-1	.14	.40	.19	.39	.22	.41
Latino	0-1	.11	.37	.16	.37	.16	.37
Asian	0-1	.06	.23	.06	.24	.05	.22
American Indian	0-1	.03	.18	.03	.17	.04	.19
Mother's Education	1-5	2.72	1.20	2.75	1.20	2.69	1.20
Family Structure	0-1	.29	.46	.27	.45	.31	.46
Parental Public Assistance	0-1	.10	.29	.09	.29	.10	.30
Strain Measures							
Traditional	-4-4	.28	.81	.33	.87	.24***	.76
Peer/Parent Suicide	0-1	.20	.40	.14	.35	.25***	.43
General Health	0-2.8	.81	.40	.73	.35	.88***	.42
School Strain	1-5	2.09	.67	2.11	.67	2.07**	.67
Physical Victimization	0-1	.18	.39	.26	.44	.11***	.31

* $p < .05$, ** $p < .01$, *** $p < .001$ denote significant gender differences with two-tailed independent sample t -tests.

Table 4.2 Descriptive Statistics for Mediating & Conditioning Variables.

Variables	Full Sample (N = 10,708)			Males (N = 4,813)		Females (N = 5,274)	
	Range	Mean	SD	Mean	SD	Mean	SD
<i>Negative Emotions</i>							
Anger	0-1	.29	.45	.30	.46	.29	.45
Depression	0-3	.56	.39	.52	.34	.61***	.29
<i>Conditioning Variables</i>							
Self-Esteem	1-5	4.10	.63	4.21	.58	3.99***	.66
Differential Association	0-9	2.32	2.55	2.41	2.59	2.23***	2.51
Social Support	1-5	4.05	.57	4.04	.56	4.07**	.57
Parental Attachment	1-5	3.84	.76	3.90	.72	3.78***	.78
Parental Involvement	0-10	2.61	1.90	2.62	1.96	2.60	1.84
School Attachment	1-5	2.21	.84	2.20	.81	2.22	.87
School Commitment	1-4	2.82	.76	2.71	.77	2.92***	.74
Church Attendance	1-4	2.78	1.20	2.73	1.21	2.83***	1.19
Religious Involvement	1-4	2.12	1.24	2.06	1.23	2.18***	1.25
Prayer	1-5	3.62	1.55	3.43	1.57	3.78***	1.50
Salience	1-4	3.07	1.05	2.99	1.07	3.13***	1.03

* $p < .05$, ** $p < .01$, *** $p < .001$ denote significant gender differences with two-tailed independent sample t -tests.

of strain. Consistent with the preceding trend, there is also a considerable gendered effect to the experience of traditional strain (disjunction between aspirations and expectations), with males being 38 percent (.33 for Males versus .24 for Females) more likely than females to experience this discrepancy. While the gender differences were not as great, males reported experiencing school-related strains at higher levels than did females. While males experienced most strains-and, consequently, the most criminogenic types of strain-at disproportionately higher levels than females, the opposite was true for two sources of strain. Table 4.2 reveals that females are disproportionately (1.79 times the amount of males) more likely to have a family member/friend that has attempted suicide. This finding is somewhat expected, given the greater likelihood of suicide ideation on the part of females (CDC, 2006; Kaufman, 2009), along with the fact that most friendship networks are gendered (Bottcher, 1995). Additionally, females report health-related strains (.88 versus .73 for males) at a rate approximately 20 percent higher than that of males; a finding consistent with the GST literature (see Jang, 2007).

Conditioning Effects

This section will first highlight some of the results regarding gender differences in the experience of crime-amplifying conditioning variables, followed by a discussion on general-and gendered-prevalence of crime-inhibiting conditioning effects. This study advances two popular crime-aggravating conditioning effects to the GST/deviance relationship: self-control and differential association. Gauging from Table 4.3, males

report having a higher number of deviant peers (males = 2.41, females = 2.23) than do females, a finding that is consistent with this research literature (Akers; 1998).

As clearly illustrated in Table 4.2, while the sample as a whole reported an elevated level of most of the crime-buffering conditioning effects (e.g. social support, parental/school attachment, religiosity) there were significant gender differences across most of these moderating variables, with females generally experiencing these protective mechanisms at higher levels than males. As might be expected, females report higher average levels of social support (4.07 for females, 4.04 for males), and school commitment (i.e. grades). Moreover, and of particular consequence to the current study, females report significantly higher levels of all dimensions of religiosity, with the exception of literal interpretation of religious scriptures (there were no significant gender differences). It warrants mentioning that this sample in general-and females in particular-demonstrates elevated levels of religiosity (e.g. mean of 3.1 out of 4 for religious salience). This is of particular relevance to the current project in that one would expect religiosity to explicitly exert its protective functions among a sample with high levels of the construct. The preceding statement notwithstanding, it must be acknowledged that previous empirical assessments of the potential conditioning effects of religiosity (Jang and Johnson, 2003, 2005) employed the use of a highly spiritual sample (African Americans). This test will hopefully disentangle the conditioning effects of religiosity; or in other words, will religiosity only serve this crime-buffering function at abnormally high levels of the construct?

Contrary to the general trend, males (mean of 4.21) report having significantly higher average levels (3.99 for females) of self-esteem. This finding is squarely in line with research emanating from the field of mental health, which consistently suggests that adolescent females have lower levels of self-esteem. Additionally, males report higher average levels of parental attachment and involvement; although the substantive significance of the former appears to be rather marginal (3.9 versus 3.8), and the latter is not statistically significant. While female report having a higher average school commitment-as measured by GPA-this difference also fails to attain statistical significance. Although females demonstrate higher levels of many theoretically relevant, crime-shielding conditioning effects (social support, religiosity), three of the four social bonding measures either reveal no statistically significant gender differences (school attachment, parental involvement), or are experienced at higher average levels by males (parental attachment).

Deviance

With all but one exception-suicide ideation-males experienced each of the five indicators of deviance/delinquency at higher rates of statistical and substantive significance. For instance, at both (males = 1.04, females = .55) and I (males = .78, females .36), males reported approximately twice the average level of violence as did females, and an average rate of property delinquency over 50 percent higher than that of females. These findings are in line with self-report data on violent and non-violent delinquency (CDC, 2006; Kaufman, 2009). Males were nearly twice as likely to

regularly (at least once or twice a week) and severely (at least four or five drinks during each episode) use alcohol at Time 1 (mean of .16 for males versus .10 for females) and Time II (mean of .24 for males versus .14 for females). Additionally, males were considerably more likely to use drugs during Waves I and II. While the fact that there was a serious decline in both property and violent offenses between the two waves might initially engender concern, this finding is consistent with a general trend that occurred

Table 4.3 Descriptive Statistics for Dependent Variables.

Variable	Range	Full Sample (N = 10,087)		Males (N = 4, 813)		Females (N = 5,274)	
		Mean	SD	Mean	SD	Mean	SD
WI Violence	0-6	.78	1.17	1.04	1.30	.55***	.97
WII Violence	0-7	.56	1.15	.78	1.35	.36***	.90
WI Property Delinquency	0-2.71	.19	.36	.24	.40	.15***	.31
Property Delinquency	0-3	.15	.32	.18	.37	.12***	.27
WI Frequent Alcohol Use	0-2	.13	.44	.16	.49	.10***	.39
WII Frequent Alcohol Use	0-2	.19	.55	.24	.62	.14***	.47
WI Drug Use	0-1	.04	.20	.06	.23	.03***	.18
WII Drug Use	0-1	.05	.22	.06	.24	.04***	.19
WI Suicide Ideation	0-1	.13	.34	.09	.29	.17***	.37
WII Suicide Ideation	0-1	.11	.31	.08	.27	.13***	.34

* $p < .05$, ** $p < .01$, *** $p < .001$ denote significant gender differences with two-tailed independent sample t -tests.

during the consistent, precipitous crime decline of the mid-to-late 1990's (Kaufman, 2009; Snyder and Sickmund, 2006). As previously mentioned, females were disproportionately likely, at both time periods, to attempt suicide, a finding consistent with previous research in this area (Broidy and Agnew, 1997).

The next chapter offers a presentation and of the findings of this research, followed in Chapter VI by a thorough discussion of the relevance of these findings for GST in general, and the Jang and Johnson (2003) thesis in particular.

CHAPTER V

RESULTS

The following multivariate analyses have been employed for the purposes of testing all relevant hypotheses outlined in the previous chapter. The analyses section of the study will commence with a detailed discussion of the relationship between negative affect and strain, followed by the effects of strain on deviance, net of relevant controls and negative affect. Lastly, a series of multivariate analyses will consist of an examination (two logistic models, two negative binomial models) of the direct and potential moderating effects (in some cases) of a series of internal and external conditioning effects on the relationship between strain, negative emotional states, and deviance. In particular, I pay attention to the “conditioning” effects of religiosity, as it relates to the GST/deviance relationship. The primary question of this research is does religiosity moderate the effects of strain-induced negative affect on deviant coping mechanisms among a nationally-representative, longitudinal sample of adolescents. To properly assess this conditioning or moderating affect, I create a series of multiplicative interaction terms that are designed to assess the ability of religiosity to buffer the delinquency-generating properties of strain-induced negative affect. The following results offer the most robust assessment to date of the Jang and Johnson thesis, by improving on other studies (Johnson and Morris, 2008) that examine this issue within

GST. I begin with a presentation of the bivariate relationship among all variables used in this study, in order to assess a zero-order relationship among all variables.

Section I: The Effects of Strain on Negative Affect

This section of results will primarily examine the following issues outlined in the first three hypotheses: (1) the ability of strain to predict both anger and depression, controlling for demographics; (2) stressful life events (poor general health, peer/parent suicide attempt, disjunction between aspirations and expectations) will be more commonly associated with depression (i.e. inner-directed negative affect), while negative relations with others (i.e. physical victimization, school-related strain) will be more consequential in predicting anger; and will be stronger predictors of bad temper; and (3) females more commonly respond to strain with inner-directed negative emotions.

Strain on Anger

Table 5.1 presents logistic regression results for anger regressed on strain, control variables, and religiosity-with odds ratios and standard errors reported. The first model represents a baseline model, which predicts the probability of parent-reported anger, using demographic controls and religiosity as predictors. I include religiosity in the baseline model to observe a potential change in the significance level of the coefficient across models. In particular, are individuals high in religiosity, as posited by Jang and Johnson (2003, 2005), less likely to have a bad temper, even when including strain

Table 5.1 Survey-Corrected Logistic Regression for Anger Regressed on Strain and Controls.

Variables	Model 1		Model 2	
	OR	SE	OR	SE
Sex	.90	.05	.90	.05
Age	1.02	.02	1.02	.02
Latino	1.04	.09	1.05	.09
Black	1.07	.10	1.03	.10
Indian	1.47**	.21	1.28	.18
Asian	1.09	.21	1.11	.22
Ma Educ.	.82**	.02	.83**	.02
Pub.Assistance	1.28**	.11	1.23*	.11
Res. Parent	1.30**	.09	1.21**	.08
Religiosity	.96**	.01	.97**	.01
Victimization			1.41**	.11
Health			1.42**	.11
School-Strain			1.28**	.05
Peer/Parent Suicide			1.12	.09
Trad. Strain			1.09*	.04
-2 LL		-6047.67		-5937.68
Model Chi- Square		159.01**		260.56**
Pseudo R-Square		.02		.04

* $p < .05$, ** $p < .01$

measures. The Model Chi-Square value of 159.01 (significant at the .01 level) indicates that the model as a whole significantly predicts anger. Regarding the demographic control variables, it appears that aside from the dummy variable for Native Americans, the proxies for social class are the only control variables that significantly predict the odds of parent-reported anger. In particular, a one-unit increase in mother's education (Odds Ratio of .82) reduces the odds of parent-reported anger by 18 percent. Moreover, the odds of parent-reported anger are 1.28 times as great (Odds Ratio of 1.28) if an individual's parents receive public assistance when compared to those adolescents whose parents do not receive public assistance. Lastly, the odds of parent-reported anger are 30 percent less for those children that reside in a two-resident parent household.

More germane to the current study, Table 5.1 indicates that four of the five strain measures (physical victimization, general health, school-related strain, and the aspirations/expectations discrepancy measure) exert significant effects on parent-indicated child anger, all in the expected (positive) direction. In particular, individuals that were physically victimized in the year preceding the Wave I interview were 1.41 times as likely as those who were not victimized to have a bad temper (as reported by their parent). Furthermore, an increase in the poor general health scale is equally associated with an increased likelihood of experiencing anger, as evidenced by an odds ratio of 1.42. These dimensions of strain, along with school-related strain (odds ratio of 1.28) were significant predictors of parent-reported bad temper at the .01 significance level. The physical victimization finding, in particular, is in line with recent developments in GST (Agnew 2001, 2002; Hay and Evans 2003) that propose certain

types of strain are more prominent in predicting the types of emotional reactions (i.e. anger) most commonly associated with the most maladaptive behavioral coping mechanisms (i.e. violence). Of particular consequence to the current study, religiosity maintains a significant, inverse relationship with parental reports of bad temper (odds ratio of .96 in the reduced model, and .97 in the full model), a finding lending some credence to the notion that religiosity reduces the odds of parental reports of bad temper, even when controlling for five different indicators of strain (Jang and Johnson, 2003).

Lastly, goodness-of-fit measures contained in Model 2 (Model Chi-Square of 260.56 significant beyond the .01 level) indicate that at least some of the predictors in the model have a significant effect on predicting bad-temper. In a related note, the Pseudo R^2 changes from a value of .02 in Model 1 to .04 in Model 2. While the Pseudo R^2 statistic in logistic regression analyses does not permit one to make inferences regarding the independent goodness-of-fit of a particular model, it does allow for comparisons across models (Freese and Long, 2006). Therefore, it does appear that the addition of the strain variables increases the ability to predict parent-indicated bad temper. Results demonstrate that many of the demographic variables maintain a significant relationship with parent-reported bad-mood. For instance, all three proxies of social class maintain their significant relationship on bad temper, although the dummy variable for Native American fails to attain statistical significance in the full model.

In relation to Hypothesis Three, and consistent with previous research in GST (Broidy and Agnew, 1997), there are no significant gender differences in the experience of parental reports of bad temper. The odds ratios for sex are insignificant in baseline

and fully specified logistic models, demonstrating that males and females experience anger at equal levels. Incidentally, Broidy and Agnew (1997) suggest that it is not gender differences in anger that are consequential in determining gender differences in reaction to strain, it is that female anger is more likely to be accompanied by depressive symptoms, which suppress external responses (i.e. violence) to strain-induced negative emotions.

In summation, results reveal that, consistent with hypothesis 1, strain exerts a significant, positive effect on parental perceptions of bad temper on the part of their children. While it is true that this measure of negative affect suffers from a number of problems-(1) the GST literature endorses the use of situational measures of anger over trait-based; (2) assessing causal ordering with this measure is problematic due to the cross sectional nature of these equations¹-the preceding results demonstrate with some degree of confidence that many indicators of strain exert significant positive effects on anger. In particular, it appears that physical victimization and health-related strain are strong predictors of anger, net of other strain indicators and demographic controls.

Concerning Hypothesis Two, results are mixed. While physical victimization (an example of “negative relations with others” that is presumably linked to external emotional responses) was a significant, robust predictor of anger, poor general health (predicted to share a weaker relationship with outer-directed negative affect) also exerted a strong, positive effect on parental reports of bad temper. Lastly, findings suggest that

¹ The parental perception of bad-temper measure is only asked at Wave I, and makes it impossible to assess the time-ordering of these measures.

religious individuals are somewhat shielded from anger, even in the face of stressful life events.

Strain on Depression

Survey-corrected ordinary least squares (OLS) regression results for the effects of demographic controls, religiosity, and strain on depressed mood are presented in Table 5.2. I report both the unstandardized and standardized regression coefficients for each model. An advantage of using the latter is that it makes it possible to compare the magnitude of coefficients within models, and by extension evaluate each covariate's unique contribution to the prediction of the outcome measure. Due to the manner in which the depressive symptoms scale was constructed (depressive symptoms in the previous week), these models do serve as proxies for longitudinal analyses (see Kaufman, 2009). Model 1 indicates that sex, age, and a number of the dummy variables for race (Hispanic, Black, and Asian) all serve as significant predictors of depression. Furthermore, the standardized regression coefficient for religiosity is significant and negative-indicating that a standard unit change in religiosity is associated with a .06 standard unit decrease in religiosity.

In the fully specified model, with strain measures and demographic controls, a few findings warrant further discussion. In particular, there is a significant relationship between sex and depression (beta coefficient of .06), as well as age and depression (beta coefficient of .12); a finding that indicates that females and older adolescents experience higher levels of depressive symptoms. The former finding lends partial explanatory

Table 5.2 Survey-Corrected OLS Regression for Depression Regressed on Strain, Conditioning Variables, and Controls.

Variables	Model 1		Model 2	
	<i>b</i>	B	B	B
Sex	.11**	.14	.05**	.06
Age	.03**	.14	.03**	.11
Latino	.04*	.04	.08**	.08
Black	.07**	.07	.08**	.09
Indian	.06	.03	-.01	-.002
Asian	.12**	.05	.15**	.09
Mother's Education	-.04**	-.11	-.03**	-.10
Public Assistance	.07**	.05	.04**	.02
Resident Parent	.05**	.05	.01	.02
Religiosity	-.01**	-.06	-.002	-.02
Victimization			.07**	.06
Health			.44**	.46
School-Strain			.11**	.18
Peer/Parent Suicide			.05**	.05
Traditional Strain			.02**	.04
R-Square		.08		.39

* $p < .05$, ** $p < .01$

credence to Hypothesis Three: females are more likely than males to respond to strain with inner-directed negative emotions. Additionally, interesting findings emerge from the four dummy variables that represent race. Specifically, Blacks, Latinos, and Asians all experience higher levels of depression, when compared to whites (reference group).

The mother's education and parental public assistant measures each exert significant effects on depressive symptoms, in the theoretically expected direction.

Taken collectively, these findings are consistent with previous research on depression (Mirowsky and Ross, 2003). With regard to this study's primary independent variable, all five indicators of strain exert a significant, positive impact on depression. This finding, which offers substantial support for Hypothesis One, is also in line with the extant GST literature in that that the experience of strain generates negative emotional states in its wake (Agnew, 1992; 2001). The beta coefficients reported in Table 5.2 make it clear that general health is the strongest predictor of depressive symptoms in Model 2². In particular, the beta coefficient of .46 indicates that a one standard unit change in poor general health is associated with a .46 standard unit change in the experience of depressive mood. This finding is principally supportive of Hypothesis Two, which predicts certain types of strains (what I term "stressful life events") are stronger predictors of inner-directed negative emotions. While, as predicted in Hypothesis One, the school-related strain measure was found to be a significant predictor of depression, the fact that it was the second strongest predictor in the model (Beta = .18) somewhat ran counter to expectations outlined in Hypothesis Two (it was predicted that traditional strain, parental/peer suicide attempt should be stronger predictors of "inner-directed" negative emotions). Incidentally, the beta coefficient for the standardized religiosity measure fails to attain statistical significance in the full model; a finding that contradicts previous research in this area (see Jang and Johnson, 2003) that uncovered a positive

² Although not reported, the bivariate correlation between general health and depressive symptoms (.54) was rather large, but regression diagnostics (not reported here) did not reveal evidence of multicollinearity.

relationship between religiosity and depression. Consequently, ancillary analyses including all conditioning variables in a fully nested regression model found that religiosity is significant (at the .01 level) and *positive* (.04). While this finding might initially seem surprising, Jang and Johnson suggest (2003, 2005) religious adherents- while being less likely to experience anger-are more likely to internalize their strain by attributing said strain to individual flaws and liabilities. Lastly, the overall predictive power of Model 2 was considerably strong, as evidenced by an R-Square value of .39.

The preceding results offer a considerable amount of support to Hypothesis One: it appears that strain exerts robust effects across different forms (internal and external) of negative affective states, even when controlling for one external conditioning variable. Support for Hypothesis Two, while somewhat mixed, was also garnered across both forms of negative emotions; different forms of strain lead to varied emotional responses to strain. Regarding gender effects, results do suggest that there is some degree of “gendering” in relation to emotional responses to strain, with females being significantly more likely to respond to strain with depressive symptoms. This finding is largely in concert with an emerging body of scholarship (Jang, 2007; Jang and Johnson, 2003, 2005; Kaufman, 2009; Sharp et al. 2005) derivative of the seminal work of Broidy and Agnew (1997). Despite the confirmatory results, the preceding evidence offers only a partial test of Hypothesis Three, with the remaining portion of that hypothesis being examined in later sections.

Section II: The Effects of Strain, Negative Affect, and Conditioning Variables on Deviance

The central focus of this study deals with the effects of strain on deviant coping mechanisms, controlling for the mediating effects of negative affective states and the moderating effects of competing theoretical variables (i.e. conditioning effects). First, I present a discussion of the independent effects of strain on deviant outcomes, followed by the effects of strain on deviance, controlling for the more proximate deviance-generating effects of anger and depression. In the final series of models, the four deviant outcomes are regressed on strain, demographic controls, negative affect, and conditioning variables for purposes of observing any independent effects of the conditioning variables. In particular, there will be two sets of negative binomial regression analyses employed for the count measures of deviance (i.e. violence, and frequent alcohol use), and two models for the dichotomous measures (i.e. drug use, suicide ideation). The following sets of analyses will essentially control for the independent contributions of each conditioning variables, while analyses testing for true moderating effects are presented in the next section. Results for the current section of analyses are reported in Tables 5.3-5.6, across all four measures of deviance. These results will offer a comprehensive examination of Hypotheses 4-6, and offers a partial test of hypothesis 7

.Effects of Strain, Negative Affect, and Conditioning Variables on Violence.

Negative binomial regression results for the independent effects of strain on violent behavior are presented in Table 5.3. I choose to report incidence rate ratios, given

Table 5.3 Survey Corrected Negative Binomial Regression for Violence Regressed on Strain, Negative Affect, Conditioning Effects, and Controls.

Variables	Model 1		Model 2		Model 3	
	IRR	SE	IRR	SE	IRR	SE
Sex	.59**	.03	.58**	.04	.60**	.04
Age	.93**	.01	.93**	.01	.89**	.01
Latino	1.25**	.09	1.24**	.09	1.27**	.09
Black	1.11	.08	1.10	.07	1.16*	.08
Asian	1.10	.17	1.09	.17	1.14	.18
Indian	1.32**	.13	1.31**	.13	1.30**	.13
Mother's Education	.93**	.02	.94**	.02	.95*	.02
Pub Asst.	1.06	.07	1.04	.07	1.02	.07
Res. Parent	1.17**	.05	1.17**	.05	1.09	.07
Wave I Violence	1.60**	.04	1.59**	.04	1.54**	.03
Victimization	1.47**	.09	1.46**	.09	1.38**	.09
Health	1.17*	.08	1.09	.08	1.08	.07
School Strain	1.20**	.04	1.18**	.04	1.14**	.04
Peer/Parent Suicide	1.07	.07	1.06	.06	1.01	.06
Traditional Strain	1.04	.03	1.04	.03	1.03	.03
Anger			1.20**	.06	1.13*	.06
Depression			1.15	.10	1.11	.11

* $p < .05$ ** $p < .10$

Table 5.3 (cont'd)

Variables	Model 1		Model 2		Model 3	
	IRR	SE	IRR	SE	IRR	SE
Self Esteem					1.09*	.04
Differential Association					1.07**	.01
Social Support					.90	.05
Parental Attachment					.98	.06
Parental Involvement					1.00	.01
School Attachment					.94	.03
School Involvement					.87**	.03
Standardized Religiosity					1.00	.01
Likelihood Ratio	1139.9**		1128.9**		1083.51**	

* $p < .05$ ** $p < .10$

that the dependent variables (suicide ideation within the past thirty days, drug use within the past thirty days, violent crime within the past year) are all ratios; estimating the number of events within a specified time frame (Freese and Long, 2006). Incidence rate ratios within negative binomial models can be interpreted in a manner somewhat similar to odds ratios in logistic regression. In other words, incident rate ratios less than 1 essentially are indicative of a negative effect of the independent variable on the dependent variable. As indicated in table 5.3, the coefficients for demographic variables

are largely in the expected direction, particularly with regard to sex and age. In particular, males have a rate of violence 1.41 (IRR = .59) times that of females. The dummy variables for race indicate that, relative to whites, Hispanics and Native Americans participate in violent behavior at a higher rate, when holding all other variables constant. More importantly, confirmatory evidence was garnered for Hypothesis Four. As indicated in Table 5.3, the incidence rate ratios for three of the five measures of strain are significant, and in the expected direction. Specifically, and somewhat in line with Hypothesis Six, the strongest predictor of strain in the baseline model is physical victimization. The incidence rate ratio of 1.47 for physical victimization reveals that for every one unit change in physical victimization, the incident rate of violent behavior is expected to increase by a factor of 1.47. The incident rate ratios for poor general health and school-related strain are also positive and significant, suggesting that the experience of these stressors is associated with an increase in the count measure of violent behavior.

A cornerstone of GST is that the relationship between strain and deviance is in fact indirect, and operates through the mediating effects of negative affective states (Agnew, 1992, 2001). In order to test this fundamental hypothesis (Hypothesis Five), anger and depression were added to the baseline model for purposes of assessing a potential mediating effect. The results presented in Model 2 of Table 5.3 reveal only a modicum of support for Hypothesis Five. While the anger measure exerts a significant (at the .05 level), positive effect on violence (IRR of 1.33), the incidence rate ratio for two of the three strain measures that attained statistical significance in the reduced model

maintain a statistically significant effect on violent behavior in the fully specified model. This finding is in contradiction to Hypothesis Five, which predicted that the effects of strain on deviance would become insignificant with the inclusion of negative affect into the model. It appears, at least in relation to violent behavior, strain exerts independent effects on maladaptive behavioral outcomes. However, support was garnered for Hypothesis Six, which predicts that the effects of negative emotion on deviance will be stronger for “same-directed” deviance than for opposite-directed deviance (Jang and Johnson 2003, 2005). In other words, inner-directed emotional responses to strain (e.g. depression) should be more strongly aligned with inner-directed coping mechanisms (e.g. alcohol/drug use; suicide ideation), and vice-versa for outer-directed emotional responses and coping mechanisms. The incidence rate ratio for anger (1.20) is significant at the .01 level, and indicates that adolescents that were reported as having a bad temper by their parents, net of all controls, are expected to have a rate 1.2 times greater for Wave II violence.

The fully nested model (Model 3) introduces all conditioning effects for purposes of determining independent effects for these measures. As expected, sex remains a strong, inverse predictor of violence, which can be expected given the disproportional involvement of men in serious violent crime (CDC, 2006; Kaufman, 2009; Snyder and Sickmund, 2006). Dummy variables for race reveal a continued trend of disproportionate involvement in violent crimes, relative to whites, on the part of Hispanics, blacks, and Native Americans. In terms of the conditioning variables, self-esteem, differential association, and school involvement all wield a significant effect on violent behavior,

albeit in different directions. While self-esteem (see Hughes, Cavell, and Grossman, 1997; Ostrowsky, 2010; Salmivalli, 2001 for evidence of this effect) and differential association exhibit positive effects on violent behavior, school involvement (GPA) exerts a significant negative effect on violence, similar to other research in this area that has employed the use of Add Health data (see Kaufman, 2009). The incident rate ratio for religiosity is practically zero (1.00) and fails to attain statistical significance. While this finding initially appears to run counter to previous empirical research, Jang and Johnson (2003) did find that religiosity was only able to significantly buffer the criminogenic effects of *inner*-directed negative emotions, not outer. Given that outer-directed negative emotions are more likely to impact outer-directed (i.e. violence) behavioral coping strategies, it is of little surprise that religiosity exerts no independent, direct effects on an *outer-directed* form of deviance. It also warrants mentioning that the most potent predictor of violence across all models was the Wave I measure of violence.

Effects of Strain, Negative Affect, and Conditioning Variables on Alcohol Use

Negative binomial regression results for frequent alcohol use (Table 5.4) on strain reveal further support for Hypothesis Four. While the range of the frequent alcohol variable is limited (0-2), it still represents a rare-event count variable, substantiated by the significant Likelihood-Ratio test of alpha across all three models (528.34, 511.26, and 392.73, respectively). This test indicates model over-dispersion, and lends credence to the use of negative binomial regression over the Poisson model. The incident rate ratios for three of the five strain indicators were positive, and significant. As was the case with

the models for violent behavior, physical victimization and school-related strain exert a significant, powerful effect on frequent alcohol use. Additionally, while an attempted suicide by a friend or parent in the year preceding the Wave I interview is significantly associated with frequent alcohol use, poor general health does not exert a significant effect. In fact, having a friend or close family member attempt suicide, compared to those that did not experience this form of strain, are expected to have a rate 1.5 times greater for frequent alcohol use, holding all other variables constant. These results again offer qualified support for Hypothesis Four, in that strain exerts significant, positive effects on deviant coping strategies.

Only mixed support is garnered for Hypothesis Five after adding negative affective variables to the model (Model 2). In particular, while anger, but not depression, is significantly related to frequent alcohol use, the inclusion of negative emotions fails to reduce the strain/deviance relationship insignificant. Physical victimization, school-related strain, and a suicide attempt by close friends/family members all continue to share a significant, positive relationship with frequent alcohol use. Confirmatory evidence was not found for Hypothesis Six, as anger, rather than depression, exerts a significant effect on alcohol use. This violates the assumption that there will be same-directed relationships between negative emotions and deviant coping mechanisms.

In the fully-nested model, which includes strain, negative emotions, conditioning variables, and demographic controls, only two of the conditioning variables (self-esteem and differential association) attain statistical significance in predicting frequent alcohol use. This finding lends partial support to Hypothesis Seven, which predicts that

Table 5.4 Survey Corrected Negative Binomial Regression for Frequent Alcohol Use Regressed on Strain, Negative Affect, Conditioning Effects, and Controls.

Variables	Model 1		Model 2		Model 3	
	IRR	SE	IRR	SE	IRR	SE
Sex	.68**	.06	.67**	.05	.71**	.06
Age	1.27**	.03	1.26**	.03	1.16**	.03
Latino	.90	.11	.89	.11	.94	.11
Black	.53**	.06	.52**	.06	.61**	.07
Asian	.43	.18	.41*	.17	.45	.18
Indian	.95	.19	.91	.18	.95	.19
Ma Educ.	.94	.04	.96	.04	.97	.04
Pub. Asst.	.87	.13	.85	.12	.82	.11
Res. Parent	1.10	.10	1.08	.10	.88	.11
Wave I Alcohol Use	2.46**	.11	2.44**	.11	1.91**	.08
Victimization	1.49**	.15	1.45**	.14	1.21*	.11
Health	1.14	.11	1.02	.12	.95	.11
School Strain	1.34**	.08	1.30**	.08	1.17**	.07
Peer/Parent Suicide	1.50**	.15	1.47**	.15	1.26*	.12
Traditional Strain	.98	.04	.96	.04	.96	.04
Anger			1.33**	.11	1.17*	.09
Depression			1.25	.15	1.24	.16

* $p < .05$ ** $p < .10$

Table 5.4 (cont'd)

Variables	Model 1		Model 2		Model 3	
	IRR	SE	IRR	SE	IRR	SE
Self Esteem					1.19*	.08
Differential Association					1.21**	.02
Social Support					.99	.09
Parental Attachment					.92	.07
Parental Involvement					.98	.03
School Attachment					.96	.05
School Involvement					.91	.05
Standardized Religiosity					1.00	.01
Likelihood Ratio	528.34**		511.26**		392.73**	

* $p < .05$ ** $p < .10$

theoretical conditioning variables will exert significant effects on deviance; net of strain, negative emotions, and demographic controls. Self-esteem and differential association are associated with increases in the expected count of frequent alcohol use (ranging from 0 to 2), holding all other variables constant. Interestingly, and somewhat surprisingly, the standardized religiosity measure fails to significantly affect frequent alcohol use. It was expected, although not explicitly outlined in the hypotheses, that religiosity would be a more robust predictor of deviant behaviors that specifically violate ascetic standards, such as alcohol use and suicide (Burkett and White, 1974). It is possible, due to the fact that

alcohol use constitutes a status offense, and therefore a *delinquent* act, that religiosity will not have a significant effect on this outcome (see Burkett and White, 1974; Evans et al.1996). Results for this model largely lend support to Hypotheses Four, but lend either no support, or only partial support, to Hypotheses 5-7.

Effects of Strain, Negative Affect, and Conditioning Variables on Drug Use

Table 5.5 presents results from a series of logistic regression models that regress drug use on strain, negative affect, conditioning effects, and demographic controls. Due to the fact that drug use is dummy coded (0 = have not used any illicit drugs in previous 30 days, 1 = have used drugs in previous 30 days), logistic regression is the appropriate analytical technique. The model chi-square values for each of the three models is significant, indicating that at least one of the correlates in each model offers predictive power that is simply not due to chance.

Model 1 regresses drug use on all five indicators of strain, and theoretical controls. The odds ratio for sex (.76) is significant beyond the .01 level of significance, indicating that the odds of using an illicit drug are reduced by 24 percent if the respondent is female. A somewhat perplexing finding is that the dummy coefficient for black, while significant, is in fact *negative*. The odds ratio of .38, suggests that being white is associated with a 1.62 times greater odds of using illicit drugs, relative to blacks.

Regarding Hypothesis Four, three of the five measures of strain are significant predictors of drug use, with the effect of physical victimization being particularly strong.

Table 5.5 Survey Corrected Logistic Regression for Drug Use on Strain, Negative Affect, Conditioning Effects, and Controls.

Variables	Model 1		Model 2		Model 3	
	OR	SE	OR	SE	OR	SE
Sex	.76*	.10	.77	.11	.71**	.11
Age	1.22**	.05	1.22**	.05	1.03	.06
Latino	1.18	.26	1.18	.26	1.29	.27
Black	.38**	.09	.39**	.09	.60*	.15
Asian	.70	.24	.70	.24	.90	.30
Indian	.27**	.12	.26**	.11	.33*	.14
Ma. Educ.	1.09	.06	1.11	.06	1.08	.06
Pub. Asst.	1.04	.29	1.00	.28	.88	.21
Res. Parent	1.22	.22	1.20	.21	.81	.15
Wave I Drug Use	14.74**	2.61	14.47**	2.59	5.29**	1.03
Physical Victimization	2.35**	.37	2.29**	.36	1.65**	.26
Health	1.72**	.30	1.67**	.31	1.41	.28
School Strain	1.21	.13	1.19	.13	.96	.12
Peer/Parent Suicide	1.48*	.28	1.46*	.27	1.16	.21
Traditional Strain	.99	.08	.97	.07	.97	.07
Anger			1.62**	.26	1.23	.20
Depression			.99	.22	.62*	.15

* $p < .05$, ** $p < .10$

Table 5.5 (cont'd)

Variables	Model 1		Model 2		Model 3	
	OR	SE	OR	SE	OR	SE
Self Esteem					.85	.12
Differential Association					1.50**	.04
Social Support					.79	.12
Parental Attachment					.72*	.11
Parental Involvement					1.04	.04
School Attachment					.95	.09
School Involvement					1.05	.09
Standardized Religiosity					.94**	.02
-2 Log Likelihood	-1542.22		-1531.87		-1309.44	
Model Chi-Square	477.55**		476.67**		643.96**	
Pseudo R-Square	.22		.23		.34	

* $p < .05$, ** $p < .10$

Poor general health, and peer/parent suicide attempt also significantly affect drug use. A one-unit increase in poor-general health is associated with a 72 percent increase in the odds of using illicit drugs in the 30 days preceding the Wave II interview. Likewise, individuals that have a family member or close friend attempt suicide during Wave I are 1.48 times as likely to use drugs at Wave II, when controlling for all other predictors.

Once again, Hypothesis Five receives only limited support in the model predicting drug use. While anger significantly predicts drug use, the odds ratio for depression does not attain statistical significance. Also, the three indicators of strain maintain a direct, significant effect on drug use, even when including anger and the three indicators of strain maintain a direct, significant effect on drug use, even when including anger and depression-offering further evidence refuting Hypothesis Five. Results also appear to refute Hypothesis Six: anger significantly predicts an inner-directed coping response to strain (drug use), while the inner-directed emotional response has no consequential impact on deviant coping.

Model 3 adds all conditioning variables to the model predicting drug use. Results offer qualified support for Hypothesis Seven, in that differential association and religiosity are independently, and significant predictors of drug use. In particular the odds ratio for differential association is strong, and significant, which can largely be expected given the manner in which the variable is measured (how many of your three closes friends either drink alcohol, smoke cigarettes, or smoke marijuana regularly). Consistent with Hypothesis Seven, religiosity is a significant inhibitor of drug use. The odds ratio of .94 indicates that for every one unit change in religiosity, the odds of using drugs decrease by six percent. Interestingly, the coefficient for depression becomes statistically significant in the final model, and the direction changes. Specifically, it appears that depression actually has a suppressive effect on drug use in the fully nested model; which again is largely inconsistent with Hypothesis Six. It necessitates

mentioning that the measure for Wave I drug use maintains a rather large effect on Wave II drug use across all three models. Despite this finding, the results lend further credence

Table 5.6 Survey Corrected Logistic Regression for Suicide Ideation on Strain, Negative Affect, Conditioning Effects, and Controls.

Variables	Model 1		Model 2		Model 3	
	OR	SE	OR	SE	OR	SE
Sex	1.36**	.15	1.33**	.14	1.33*	.15
Age	.91**	.03	.89**	.03	.88**	.03
Latino	1.11	.16	1.06	.15	1.06	.15
Black	.64**	.10	.61**	.10	.62**	.10
Asian	1.11	.25	1.05	.24	1.05	.24
Indian	.89	.20	.88	.20	.88	.20
Ma. Educ.	.97	.05	1.00	.05	1.01	.05
Pub. Asst.	1.06	.19	1.03	.18	1.02	.18
Res. Parent	1.14	.12	1.13	.12	1.12	.15
Wave I Suicide Ideation	6.33**	.60	5.68**	.56	5.46**	.54
Victimization	1.03	.14	.99	.13	.99	.13
Health	1.95**	.27	1.51**	.22	1.51**	.22
School Strain	1.15*	.07	1.07	.07	1.03	.09
Peer/Parent Suicide	1.76**	.19	1.74**	.18	1.72**	.19
Traditional Strain	1.02	.06	1.01	.06	.99	.06
Anger			1.16	.14	1.13	.13
Depression			1.75**	.23	1.52**	.22

* $p < .05$, ** $p < .10$

Table 5.6 (cont'd)

Variables	Model 1		Model 2		Model 3	
	OR	SE	OR	SE	OR	SE
Self Esteem					.89	.07
Differential Association					1.00	.02
Social Support					.83	.09
Parental Attachment					1.03	.11
Parental Involvement					.98	.03
School Attachment					.97	.07
School Involvement					.93	.06
Standardized Religiosity					1.01	.01
-2 Log Likelihood	-2964.28		-2947.52		-2939.33	
Model Chi-Square	599.04**		615.71**		628.00**	
Pseudo R-Square	.16		.17		.17	

* $p < .05$, ** $p < .10$

to the notion that different forms of strain will lead to different forms of coping strategies (Agnew, 2001, 2006; Hay and Evans, 2006; Jang and Johnson, 2003, 2005).

Effects of Strain, Negative Affect, and Conditioning Variables on Suicide Ideation.

Table 5.6 offers results from three sets of logistic regression analyses that regress suicide ideation on strain, negative affect, conditioning effects, and demographic controls. As was the case with drug use, the suicide ideation measure is dummy-coded, therefore I use logistic models to examine the relationship among all variables.

Model chi-square values across all three models reveal that the model itself is in fact significant, and therefore has predictive merit. Consequently, and lending support to Hypothesis Four, three of the strain measures are significant predictors of suicide ideation in the baseline model, with strain and controls. In particular, the odds ratio for poor health almost reaches 2, which is indicative of a nearly two-fold increase in the odds of thinking about suicide with each unit increase in poor general health. Not only does this finding offer confirmatory evidence to Hypothesis Four, it also substantiates the identification and inclusion of novel, previously untapped sources of strain (Agnew, 2006; see Sharp et al. 2005) in accounting for varied forms of deviance. Counter to the three previous deviant outcomes, the odds ratio for physical victimization fails to significantly predict suicide ideation. Health, school-related strain, and peer/parental suicide attempt are strong predictors of suicide ideation in the baseline models. Yet again, it appears that strain is a rather robust predictor of deviant behavior, across different deviant outcomes.

Results contained within Model 2 offer substantial support to Hypothesis Six and qualified support for Hypothesis Five. Regarding Hypothesis Five, while depression significantly affects suicide ideation (consistent with Hypothesis Five), poor health and

peer/parental suicide attempt remain significant covariates as well. Hypothesis Six is strongly supported by the fact that the same-directed thesis (of the relationship between emotions and coping strategies) is upheld. In particular, the odds ratio for depression (1.75) demonstrates that each unit increase in depression (inner-directed emotion) increases the odds of thinking about suicide by a factor of 1.75.

The fully nested logistic model (Model 3) reveals very little support for Hypothesis Seven. None of the conditioning variables exert a significant independent effect on suicide ideation. Additionally, the pseudo R-Square statistic (Model 2 = .17, Model 3 = .17) indicates that the model fit is not drastically improved with the inclusion of the theoretical conditioning variables.

The preceding results revealed a number of salient findings regarding the relationship between strain, negative affect, conditioning variables, and deviance. First, it appears that strain has strong, direct effects on different forms of deviant behavior; ranging from inner-directed (suicide ideation) to outer-directed (violence) deviance. It also warrants mentioning that the measure for traditional strain (the disjunction between aspirations and expectations) fails to reach statistical significance for *any* measure of deviance, a finding which lends credence to the assertion made by Agnew (1992) in his formulation of GST, when he indicated that the null findings of traditional strain theory could largely be explained by the poor conceptualization of the construct.

Another principal finding is that the effects of strain on deviance appear to operate independent of mediating negative emotions. For each measure of deviant outcomes, multiple sources of strain remained significant predictors of deviance even

with the inclusion of negative affective states. It must be acknowledged, however, that only a partial test of this hypothesis was conducted, given my chosen analytical strategy. For instance, while I attempted to “assess” the potential mediating effects of negative emotions on the strain/deviance relationship by simply controlling for them in a separate regression model, this represented a limited test due to the lack of multiplicative interaction terms, that could more properly flesh out potential meditation effects (Jang and Johnson, 2003, 2005; Sharp et al, 2001). On a different note, results lend some support for same-directed effects between strain-induced negative affect and coping responses to these emotions. In particular, this same-directed effect (with inner-directed emotional responses predicting inner-directed deviant coping mechanisms, and vice-versa for outer-directed emotions) was witnessed with the effects of anger on violence, as well as depression on suicide ideation.

Section III: The Interaction Effects of Strain and Religiosity on Deviant Coping Strategies

While the preceding section did offer a fully specified estimation of the *independent*, direct effects of key theoretical conditioning variables (most notably social control, differential association), scholarship within the GST tradition is more concerned with the *moderating* effects that these variables have on the relationship between strain, negative affect, and deviant coping (Agnew and White, 1992; Agnew et al. 2002; Hay and Evans, 2006; Jang and Johnson, 2003, 2005; Johnson and Morris, 2008; Paternoster and Mazerolle, 1994; Robbers, 2004). As mentioned previously, there is an emerging

body of research within GST (Jang and Johnson 2003, 2005; Johnson and Morris, 2008) that primarily focuses on the introduction of new conditioning factors (e.g. religiosity) to

Table 5.7 Survey Corrected Negative Binomial Regression for Violence Regressed on Strain, Negative Affect, Conditioning Effects, with Interaction Effects.

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)
Sex	.60** (.04)	.60** (.04)	.60** (.04)	.60** (.04)	.60** (.04)
Age	.89 (.01)**	.89 (.01)**	.89 (.01)**	.89 (.01)**	.89 (.01)**
Latino	1.28** (.09)	1.27** (.09)	1.27** (.09)	1.28** (.09)	1.28** (.09)
Black	1.16* (.08)	1.16* (.08)	1.16* (.08)	1.16* (.08)	1.16* (.08)
Asian	1.15 (.18)	1.15 (.18)	1.14 (.18)	1.15 (.18)	1.14 (.18)
Indian	1.30** (.13)	1.30** (.13)	1.30** (.13)	1.30** (.13)	1.30** (.13)
Education	.95* (.02)	.95* (.02)	.95* (.02)	.95* (.02)	.95* (.02)
Assistance	1.02 (.07)	1.02 (.07)	1.02 (.07)	1.02 (.07)	1.02 (.07)
Res. Parent	1.09 (.07)	1.09 (.07)	1.09 (.07)	1.09 (.07)	1.09 (.07)
WI Violence	1.54** (.03)	1.54** (.03)	1.54** (.03)	1.54** (.03)	1.54** (.03)
Victimization	1.39** (.09)	1.38** (.09)	1.38** (.09)	1.38** (.09)	1.38** (.09)
Health	1.08 (.07)	1.08 (.07)	1.08 (.07)	1.08 (.07)	1.08 (.07)
School Strain	1.14** (.04)	1.14** (.04)	1.14** (.04)	1.14** (.04)	1.14** (.04)
Peer/Parent Suicide	1.01 (.06)	1.01 (.06)	1.01 (.06)	1.01 (.06)	1.01 (.06)
Trad. Strain	1.03 (.03)	1.03 (.03)	1.03 (.03)	1.03 (.03)	1.03 (.03)
Anger	1.13* (.06)	1.13* (.06)	1.13* (.06)	1.13* (.06)	1.13* (.06)
Depression	1.11 (.11)	1.11 (.11)	1.11 (.11)	1.11 (.11)	1.11 (.11)

* $p < .05$, ** $p < .01$

Table 5.7 (cont'd)

Variables	Model 1 Exp (B) (SE)	Model 2 Exp (B) (SE)	Model 3 Exp (B) (SE)	Model 4 Exp (B) (SE)	Model 5 Exp (B) (SE)
Self Esteem	1.09* (.04)	1.09* (.04)	1.09* (.04)	1.09* (.04)	1.09* (.04)
Differential Association	1.07** (.01)	1.07** (.01)	1.07** (.01)	1.07** (.01)	1.07** (.01)
Social Support	.90 (.05)	.90 (.05)	.90 (.05)	.90 (.05)	.90 (.05)
Par. Attach.	.98 (.05)	.98 (.05)	.98 (.05)	.98 (.05)	.98 (.05)
Par. Involve	1.00 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)
Sch Att.	.94 (.03)	.94 (.03)	.94 (.03)	.94 (.03)	.94 (.03)
Sc. Involve	.87** (.03)	.87** (.03)	.87** (.03)	.87** (.03)	.87** (.03)
Standardized Religiosity	.99 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)
Religiosity * Victimization	1.01 (.01)				
Religiosity * Health		1.00 (.01)			
Religiosity * School Strain			1.00 (.01)		
Religiosity * Peer/Parent Suicide				1.00 (.01)	
Religiosity * Trad. Strn					1.01 (.01)
Likelihood Ratio	1080.86**	1082.88**	1082.52**	1083.36**	1081.98**

* $p < .05$, ** $p < .01$

the GST/deviance relationship, which incidentally is the primary focus of the current study. In order to properly test for these conditioning effects, multiplicative interaction terms were added to the fully-specified regression models for the four measures of

deviance. It must be acknowledged that this study offers only a partial estimation of moderating effects, as I limit my focus to the ability of *religiosity* to condition the strain/negative emotions/deviance relationship. Additionally, interaction terms are entered individually, as opposed to simultaneously, thus the current examination does not represent a stringent examination of the moderating effects of religiosity (see Jang and Johnson, 2003).

Results for the interactions of each of the five indicators of strain and religiosity on deviance are presented in Tables 5.7-5.10. It must be acknowledged that the modeling strategy employed in this research only allows for a partial test of Hypothesis Seven, given that I only estimate—due to the centrality of religiosity to the current study—moderating effects for religiosity. Table 5.7 presents results testing for buffering effects of religiosity on the relationship between strain and violence. Results suggest that none of the interactions between religiosity and strain approach statistical significance, highly indicative of the inability of religiosity to buffer strained individuals from violent coping mechanisms.

With regard to frequent alcohol use, there does appear to be an interaction effect between religiosity and at least one indicator of strain. Specifically, the incidence rate ratio for the religiosity/physical victimization interaction is a significant, positive predictor of frequent alcohol use. While the coefficient is positive, it fails to support the idea that religiosity shields strained individuals from adopting deviant behavioral mechanisms in response to strain. Conversely, the positive coefficient (IRR = 1.05) suggests that physical victimization has a more pronounced effect on violent behavior at

Table 5.8 Survey-Corrected Negative Binomial Regression for Frequent Alcohol Use on All Predictors, with Interaction Terms.

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)
Sex	.71** (.06)	.71** (.06)	.71** (.06)	.71** (.06)	.71** (.06)
Age	1.16** (.03)	1.16** (.03)	1.16** (.03)	1.16** (.03)	1.16** (.03)
Latino	.94 (.11)	.94 (.11)	.94 (.11)	.94 (.11)	.94 (.11)
Black	.61** (.07)	.61** (.07)	.61** (.07)	.61** (.07)	.61** (.07)
Asian	.46 (.19)	.45 (.19)	.45 (.18)	.45* (.18)	.45 (.18)
Indian	.94 (.18)	.95 (.19)	.95 (.19)	.95 (.18)	.96 (.19)
Education	.97 (.04)	.97 (.04)	.97 (.04)	.97 (.04)	.97 (.04)
Pub Assist.	.81 (.11)	.81 (.11)	.82 (.11)	.82 (.11)	.82 (.11)
Res. Parent	.89 (.11)	.88 (.11)	.88 (.11)	.88 (.11)	.89 (.11)
W I Alc. Use	1.91** (.08)	1.92** (.08)	1.91** (.08)	1.91** (.08)	1.91** (.08)
Victimization	1.27* (.11)	1.22* (.11)	1.21* (.11)	1.21* (.11)	1.21* (.11)
Health	.93 (.10)	.94 (.11)	.95 (.11)	.95 (.11)	.94 (.11)
School Strain	1.17** (.06)	1.17** (.07)	1.17** (.06)	1.17** (.07)	1.17** (.07)
Peer/Parent Suicide	1.25* (.12)	1.26** (.12)	1.25* (.12)	1.28** (.12)	1.26* (.12)
Trad. Strain	.96 (.04)	.96 (.04)	.96 (.04)	.96 (.04)	.97 (.04)
Anger	1.17 (.09)	1.17 (.09)	1.17 (.09)	1.17* (.09)	1.17* (.09)
Depression	1.24 (.16)	1.23 (.16)	1.24 (.16)	1.23 (.16)	1.24 (.16)

* $p < .05$, ** $p < .01$

Table 5.8 (cont'd)

Variables	Model 1 Exp (B) (SE)	Model 2 Exp (B) (SE)	Model 3 Exp (B) (SE)	Model 4 Exp (B) (SE)	Model 5 Exp (B) (SE)
Self Esteem	1.18* (.08)	1.19* (.08)	1.19* (.08)	1.19* (.08)	1.19* (.08)
Differential Association	1.22** (.02)	1.21** (.02)	1.21** (.02)	1.22** (.02)	1.22** (.02)
Social Support	.99 (.09)	.99 (.09)	.99 (.09)	.99 (.09)	.99 (.09)
Parental Attachment	.93 (.08)	.93 (.07)	.92 (.08)	.92 (.07)	.93 (.08)
Parental Involvement	.98 (.03)	.98 (.03)	.98 (.03)	.98 (.03)	.98 (.03)
School Attachment	.96 (.05)	.96 (.05)	.96 (.05)	.96 (.05)	.96 (.05)
School Involvement	.91 (.05)	.91 (.05)	.91 (.05)	.91 (.05)	.91 (.05)
Standardized Religiosity	.99 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)
Religiosity * Victimization	1.05* (.02)				
Religiosity * Health		.99 (.02)			
Religiosity * School Strain			1.00 (.01)		
Religiosity * Peer/Parent Suicide				1.02 (.02)	
Religiosity * Traditional Strain					1.01 (.01)
Likelihood Ratio	391.51**	391.41**	392.77**	392.89**	392.38**

* $p < .05$, ** $p < .01$

Table 5.9 Survey Corrected Logistic Regression for Drug Use on All Predictors, with Interaction Terms.

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Sex	.71* (.11)	.71* (.11)	.71* (.11)	.71* (.11)	.71* (.11)
Age	1.03 (.06)	1.03 (.06)	1.03 (.06)	1.03 (.06)	1.03 (.06)
Latino	1.29 (.27)	1.29 (.27)	1.30 (.27)	1.29 (.27)	1.30 (.27)
Black	.59* (.15)	.60* (.15)	.60* (.27)	.59* (.15)	.60* (.15)
Asian	.91 (.31)	.90 (.30)	.91 (.30)	.90 (.30)	.91 (.31)
Indian	.32** (.14)	.33* (.14)	.32** (.14)	.33* (.14)	.32** (.14)
Education	1.08 (.06)	1.08 (.06)	1.08 (.06)	1.08 (.06)	1.08 (.06)
Pub. Assist.	.89 (.21)	.88 (.21)	.89 (.20)	.88 (.21)	.88 (.21)
Res. Parent	.81 (.15)	.81 (.15)	.81 (.15)	.81 (.15)	.81 (.15)
Wave I Drug Use	5.26** (1.02)	5.29** (1.03)	5.30** (1.02)	5.29** (1.03)	5.28** (1.02)
Victimization	1.77** (.31)	1.65** (.26)	1.65** (.26)	1.65** (.26)	1.65** (.26)
Health	1.39 (.27)	1.41 (.29)	1.39 (.27)	1.41 (.28)	1.41 (.27)
School Strain	.96 (.12)	.96 (.12)	1.04 (.05)	.96 (.12)	.96 (.12)
Peer/Parent Suicide	1.16 (.21)	1.16 (.21)	1.16 (.21)	1.15 (.21)	1.16 (.21)
Trad. Strain	.97 (.07)	.97 (.07)	.97 (.07)	.97 (.07)	.94 (.07)
Anger	1.23 (.19)	1.23 (.20)	1.23 (.19)	1.23 (.20)	1.23 (.19)
Depression	.62* (.15)	.62* (.15)	.62* (.15)	.62* (.15)	.62* (.15)

* $p < .05$, ** $p < .01$

Table 5.9 (cont'd)

Variables	Model 1 OR (SE)	Model 2 OR (SE)	Model 3 OR (SE)	Model 4 OR (SE)	Model 5 OR (SE)
Self Esteem	.85 (.12)	.85 (.12)	.85 (.12)	.85 (.12)	.85 (.12)
Diff. Assc.	1.50** (.04)	1.50** (.04)	1.50** (.04)	1.50** (.04)	1.50** (.04)
Soc. Support	.79 (.12)	.79 (.12)	.79 (.12)	.79 (.12)	.79 (.12)
Par. Attach.	.73** (.11)	.72** (.11)	.73* (.11)	.73* (.11)	.72** (.11)
Par Involve.	1.04 (.04)	1.04 (.04)	1.04 (.04)	1.04 (.04)	1.04 (.04)
Sch. Attch.	.95 (.09)	.95 (.09)	.95 (.09)	.95 (.09)	.95 (.09)
Schl Involve.	1.05 (.09)	1.05 (.09)	1.05 (.09)	1.05 (.09)	1.05 (.09)
Religiosity	.93** (.02)	.94** (.02)	.93** (.02)	.95** (.02)	.94** (.02)
Religiosity * Victimization	1.03 (.04)				
Religiosity * Health		1.00 (.04)			
Religiosity * School Strain			1.04 (.02)		
Religiosity * Par. Sued				1.00 (.05)	
Religiosity * Trad. Strain					.99 (.02)
-2 LL	-1308.74	-1309.44	-1307.06	-1309.43	-1309.14
Model Chi-Square	647.07**	652.09**	640.48**	644.93**	643.43**
Pseudo R-Square	.34	.34	.34	.34	.34

* $p < .05$, ** $p < .01$

higher levels of religiosity. This finding runs counter to the fundamental supposition of the current research, as well as previous research in the field (most notably Jang and Johnson, 2003; Johnson and Morris, 2008). Specifically, these results stand in strict contradiction to the former study due to direction of the interaction is positive, suggesting that religiosity has aggravating effects on the relationship between strain, negative emotions, and frequent alcohol use. Additionally, this finding offers confirmatory evidence to a moderating effect for religiosity; which was not found in the Johnson and Morris study, employing the use of the same data. This finding can be attributed to the fact that the Johnson and Morris (2008) study failed to include measures of deviant behavior that are more analogous to crime, such as alcohol use. This is a vital point because the extant religiosity and crime literature has suggested that religiosity only has a significant relationship on ascetic deviance-or in other words, behaviors that violate moral rather than secular standards (Burkett and White, 1974). However, it must be acknowledged that the preponderance of literature in this area suggests religiosity exhibits a deviance inhibiting effect, while the current findings suggest otherwise.

Concerning drug use, none of the odds ratios for the religiosity/strain interaction terms attain statistical significance in Table 5.9; indicative of the fact that religiosity fails to moderate the relationship between any sources of strain and drug use. Lastly, the same holds true for the relationship between the strain/religiosity interaction terms and suicide ideation. All five interaction terms presented in Table 5.10 are near one, and insignificant; suggesting there is no conditioning effect of religiosity on the strain/deviance relationship.

Table 5.10 Survey Corrected Logistic Regression for Suicide Ideation Regressed on All Predictors, with Interaction Terms.

	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Sex	1.33* (.15)	1.33* (.15)	1.33* (.15)	1.33* (.15)	1.33* (.15)
Age	.88** (.03)	.88** (.03)	.88** (.03)	.88** (.03)	.88** (.03)
Latino	1.06 (.15)	1.06 (.15)	1.06 (.15)	1.06 (.15)	1.05 (.15)
Black	.63** (.10)	.63** (.10)	.62** (.10)	.62** (.10)	.62** (.10)
Asian	1.04 (.23)	1.05 (.24)	1.05 (.24)	1.05 (.24)	1.05 (.24)
Indian	.89 (.20)	.88 (.20)	.88 (.20)	.87 (.20)	.88 (.20)
Education	1.01 (.05)	1.01 (.05)	1.00 (.05)	1.01 (.05)	1.01 (.05)
Pub Assist	1.02 (.18)	1.02 (.18)	1.02 (.18)	1.02 (.18)	1.02 (.18)
Res. Parent	1.12 (.15)	1.13 (.16)	1.12 (.16)	1.12 (.15)	1.12 (.16)
WI Suicide Ideation	5.48** (.54)	5.47** (.54)	5.48** (.54)	5.47** (.54)	5.47** (.54)
Victimization	.94 (.13)	.98 (.13)	.99 (.13)	.99 (.13)	.99 (.13)
Health	1.53** (.22)	1.53** (.22)	1.51** (.22)	1.51** (.22)	1.51** (.22)
School Strain	1.03 (.09)	1.03 (.09)	1.02 (.09)	1.03 (.09)	1.03 (.09)
Peer/Parent Suicide	1.73** (.19)	1.72** (.19)	1.72** (.19)	1.71** (.19)	1.72** (.19)
Trad. Strain	1.00 (.05)	1.00 (.05)	1.00 (.05)	.99 (.06)	1.00 (.06)
Anger	1.13 (.13)	1.13 (.13)	1.13 (.13)	1.13 (.13)	1.13 (.13)
Depression	1.51** (.22)	1.53** (.22)	1.53** (.22)	1.53** (.22)	1.51** (.22)

* $p < .05$, ** $p < .01$

Table 5.10 (cont'd)

Variables	Model 1 OR (SE)	Model 2 OR (SE)	Model 3 OR (SE)	Model 4 OR (SE)	Model 5 OR (SE)
Self Esteem	.89 (.08)	.89 (.07)	.89 (.08)	.89 (.07)	.89 (.07)
Diff. Assc.	1.00 (.02)	1.00 (.02)	1.00 (.02)	1.00 (.02)	1.00 (.02)
Soc.Support	.83 (.09)	.84 (.09)	.83 (.09)	.83 (.09)	.83 (.09)
Par. Attach	1.03 (.11)	1.04 (.11)	1.03 (.11)	1.03 (.11)	1.03 (.11)
Par. Involve	.98 (.03)	.98 (.03)	.98 (.03)	.98 (.03)	.98 (.03)
Schl Att.	.96 (.07)	.97 (.07)	.97 (.07)	.96 (.07)	.97 (.07)
Schl Involve	.93 (.06)	.93 (.06)	.93 (.06)	.93 (.06)	.93 (.06)
Religiosity	1.02 (.01)	1.00 (.01)	1.01 (.01)	1.01 (.02)	1.01 (.01)
Religiosity * Victimization	.95 (.03)				
Religiosity * Health		1.03 (.03)			
Religiosity * School Strain			.99 (.02)		
Religiosity * Peer/Parent Suicide				.99 (.02)	
Religiosity * Trad. Strain					1.00 (.15)
-2 LL	-2936.08	-2937.93	-2936.21	-2938.98	-2939.27
Model Chi- Square	633.69**	627.16**	634.57**	628.21**	629.8**
Pseudo R- Square	.17	.17	.17	.17	.17

* $p < .05$, ** $p < .01$

The preceding presentation of analyses leads to one fundamental conclusion: there is little support for a moderating effect of religiosity on the relationship between strain, negative emotions, and deviant behavior. First, only one of the 20 interaction terms (physical victimization/religiosity on frequent alcohol use) employed in these analyses was found to be significant. Moreover, this effect was in the opposite of the hypothesized direction. Suffice it to say, these results fail to lend any credence to the ability of religiosity to buffer the criminogenic consequences of strain

Section IV: The Effects of Strain on Negative Affect, by Gender

The following sections simply model the effects of strain, negative affect, and religiosity on deviance by gender; in order to determine if the trajectories that lead from strain to deviance do differ by gender. It warrants mentioning that a potential weakness inherent in this series of gendered analyses is that I employed no tests for significant differences in coefficients *across* the gendered models (Paternoster, Brame, Mazerolle, and Piquero, 1998). In other words, the current analyses offer no examination as to whether the difference in coefficients for males and females, across models is in fact statistically significant. Finally, as was the case in the earlier models, religiosity is included in each model for purposes of determining if the construct exerts significant effects on negative affect, independent of strain.

Strain and Anger

The seminal work of Broidy and Agnew (1997) posited that not only were there gender differences in relation to the experience of strain, and the resulting strain-

generated negative affective states, but there are also gendered pathways that lead from strain to deviant behavior. These “gendered” pathways were explicitly examined in the recent pivotal work of Kaufman (2009), who found some “gendering” in the trajectories that led from strain to deviant coping. Kaufman (2009) found this “gendering” effect with deviant behavior primarily associated with males (i.e. weekly drinking, violent behavior), but no such effect emerged when observing the pathways that lead to traditionally “female” forms of deviance (i.e. suicide ideation, running away). A primary goal of the current research is to observe potential gendered effects in strain trajectories by including a more comprehensive measure of strain, as well as potential conditioning variables that moderate this process (i.e. religiosity). The first step in this process is to illuminate gendering in the experience of negative affective states. Table 5.11 presents survey-corrected logistic regression results that model anger on demographic controls, religiosity, and strain, disaggregated by gender. Regarding the demographic variables, there is evidence in Model 1 that indicates the odds of experiencing parent-reported anger are significantly higher for Hispanic females relative to white females. When observing proxies for class standing, the results seem to be largely similar across gender, with mother’s education being a significant predictor of parental perceptions of adolescent bad temper in the baseline (OR = .84 for males, .79 for females) and full (OR = .85 for males, .80 for females) models. Similarly, residing in a single parent household is a positive predictor of male (OR = 1.32 for males, 1.29 for females) and female temper in the baseline model, but attains statistical significance only for females in the full model.

Table 5.11 Survey Corrected Logistic Regression for Anger Regressed on Strain, Conditioning Variables, and Controls, by Gender.

Variables	Model 1		Model 2	
	Males	Females	Males	Females
	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Age	1.01 (.03)	1.04 (.03)	1.01 (.03)	1.04 (.03)
Latino	.82 (.11)	1.29* (.16)	.82 (.11)	1.33* (.17)
Black	.88 (.11)	1.28 (.16)	.85 (.11)	1.26 (.16)
Indian	1.54 (.32)	1.39 (.31)	1.34 (.31)	1.22 (.26)
Asian	1.11 (.28)	1.05 (.24)	1.13 (.32)	1.06 (.25)
Education	.84** (.03)	.79** (.03)	.85** (.03)	.80** (.03)
Pub.Assistance	1.33* (.18)	1.25 (.15)	1.26 (.17)	1.23 (.15)
Res.Parent	1.32** (.12)	1.29** (.12)	1.21 (.12)	1.23* (.11)
Religiosity	.97* (.01)	.95** (.01)	.98 (.01)	.96** (.01)
Victimization			1.43** (.13)	1.39* (.19)
Health			1.33* (.16)	1.49** (.15)
School-Strain			1.34** (.09)	1.21** (.06)
Parent Suicide			1.04 (.13)	1.20 (.12)
Trad.Strain			1.12* (.05)	1.05 (.05)
-2 LL	-2946.70	-3083.17	-2886.11	-3032.28
Model Chi-Square	55.49**	117.86**	111.77**	165.69**
Pseudo R-Square	.02	.03	.04	.05

* $p < .05$, ** $p < .01$

Results from the baseline model suggest that religiosity significantly inhibits parental reports of bad mood for both males and females, but there does appear to be a slight gendered effect. Specifically, the odds ratio for females not only reaches a higher

level of statistical significance (.01 for females versus .05 for males), but the negative effect appears to also be stronger for females (odds ratio = .97 for males, .95 for females). Lastly, the Pseudo R-Square coefficient is slightly larger for the female baseline model (.03 for females versus .02 for males), which potentially suggests a better model-fit for females.

Model 2 introduces five indicators of strain to the baseline models, predicting anger. Table 5.11 clearly indicates a slight gendering effect with regard to the effect of strain on bad temper, net of religiosity and demographic controls. In particular, three of the strain indicators serve as significant predictors of bad temper among females (victimization, health, and school-related strain), while four measures of strain (victimization, poor general health, school-related strain, and traditional strain) significantly predict male parent-indicated bad temper. Experiencing a physical victimization in the year preceding the Wave I interview (odds ratio = 1.43) increases the odds of experiencing parental-reported anger by 43 percent for males. With regard to female bad temper, a one-unit increase in poor general health (odds ratio = 1.49) increases the odds of parental-indicated bad temper by 49 percent. Further evidence of the gendering of the experience of strain is found in the anger-inducing effects of poor general health. Specifically, the coefficient for poor general health is only significant at the .05 level of significance for males, while the corresponding female coefficient attains significance at the .01 level. These findings suggest that the disjunction between educational aspirations and expectations are more consequential in predicting male anger, while poor general health has a greater impact on female anger.

Of greater consequence to this study, it appears that religiosity has a stronger anger-shielding capacity for females as compared to males. For females, the odds ratio of .96 suggests that each unit increase in religiosity is associated with a four percent decline in the odds of having a bad temper. While this coefficient is close to 1, and therefore may be weak in substantive significance, this suggests that religiosity has stronger protective features for females when compared to males (Jang, 2007; Jang and Johnson, 2003, 2005).

These results suggest, in line with Hypothesis Eight, that religiosity serves a greater protective function for females, in relation to the pathway leading from strain to deviance. As was the case with the baseline models, the fully-specified regression models appear to offer a better overall fit with regard to female anger (Pseudo R-Square of .05 for females, and .04 for males).

Strain and Depression

OLS results of depression regressed on strain, religiosity, and demographic controls, disaggregated by gender, are presented in Table 5.12. Age, in the baseline and full models, is a positive, significant predictor of both male and female depression. Hispanic, Black, and Asian males and females were significantly likely to report depressive symptoms, when compared to whites. Parental public assistance has

Table 5.12 Survey Corrected OLS Regression for Depression Regressed on Strain, Conditioning Variables, and Controls, by Gender.

Variables	Model 1				Model 2			
	Males		Females		Males		Females	
	<i>b</i>	B	<i>b</i>	B	<i>b</i>	B	<i>b</i>	B
Age	.03**	.16	.03**	.12	.03**	.15	.02**	.09
Latino	.05*	.05	.04	.03	.07**	.07	.08**	.06
Black	.08**	.08	.07**	.06	.09**	.10	.08**	.07
Asian	.13**	.12	.11*	.05	.13**	.11	.11**	.04
Indian	.07	.05	.06	.03	-.01	.01	-.04	-.02
Education	-.03**	-.09	-.05**	-.13	-.03**	-.10	-.03**	-.09
Public Assistance	.10**	.06	.03	.02	.08**	.04	.01	.01
Res. Parent	.04*	.05	.05**	.06	.002	.02	.02	.02
Religiosity	-.002	-.03	-.01**	-.08	-.001	-.01	-.01	-.02
Victimization					.07**	.07	.07**	.05
Health					.40**	.41	.47**	.47
School Strain					.10**	.19	.12**	.19
Peer/Parent Suicide					.01	.03	.07**	.07
Trad. Strain					.01*	.04	.02**	.04
R-Square	.07		.06		.35		.40	

* $p < .05$, ** $p < .01$

aggravating effects on male depression in both reduced and full models, although the effect is insignificant in both models for females. The religiosity measure is inversely related to female, but not male, depression in the reduced model, although the effect becomes insignificant when adding the strain measures to the model.

In the fully-nested models, all five strain measures were significant in predicting female depression, and four of the five (with the exception of peer/parental suicide attempt) were significant in predicting male depression. Given that all five strain indicators are significant correlates of female depression, Hypothesis Three (females are more likely than males to respond to strain with inner-directed negative affect) is given a degree of validation. Additionally, there does seem to be some gendering in the pathways leading to depression, as evidenced by the standardized regression coefficients for the strain measures. Most notably, a suicide attempt in the year preceding the Wave I interview appears to be a salient correlate of female, but not male, depression; lending additional support to Hypothesis Three. Moreover, the disjunction between educational aspirations and expectations (beta coefficient of .04) appears to more significantly induce depressive symptoms among females.

The beta coefficients in the full and reduced models clearly suggest that poor health is easily the strongest predictor of male and female depression; a finding that substantiates the need for identifying new sources of strain (see Agnew, 2001; 2006). The coefficient for religiosity fails to attain statistical significance in predicting either male or female depression, but this finding is not entirely unexpected, given the fact that Jang and Johnson (2003) suggest that religiosity-if anything-serves to *increase* depression in the face of stress. The fact that the coefficients were insignificant across gendered models is highly suggestive that there is no gendering effect of the relationship between religiosity and this form of negative affect. As was the case with anger, it appears that explanatory credence is enhanced, in both the baseline and fully-nested models, when observing female depression. Specifically, the full model has an R-Square value of .40,

which indicates that the independent variables account for 40 percent of the explained variation in female depression.

The preceding results offer some support to the notion that females are not only more likely to experience inner-directed negative emotions, but the pathways that lead to these negative emotions are somewhat gendered (Kaufman, 2009). It appears that physical victimization and traditional strain are more consequential in leading to anger among males, while poor general health plays a more pivotal role in leading to the female experience of bad temper (as reported by the respondent's parents). Further substantiating this point is the fact that all five indicators of strain are significantly related to female depression, while the suicide attempt of a parent or close friend evidently has no impact on male depression. In a similar fashion, the external conditioning factor of religiosity conditioning factors play a different role in inhibiting or aggravating male and female anger. In consonance with expectations, religiosity significantly reduces the likelihood of having a bad temper for females, but not males. The results appear to provide unequivocal support to the position that there at least gendered pathways that lead from strain to negative affect, the following section attempts to illuminate such pathways leading from strain to deviant coping mechanisms.

Section V: The Effects of Strain, Negative Affect, and Conditioning Variables on Deviance, by Gender

A crucial component of the present study is assessing differences in the effects of conditioning variables by gender. While Jang and Johnson (2005), and Johnson and Morris (2008), have offered salient contributions to the GST literature, I hope to improve

upon their analyses by employing a more valid measure of religiosity, and numerous sources of strain. Another area of interest is to further the work of Broidy and Agnew in general, and Kaufman (2009) in particular, by examining the gendering of the strain/deviance relationship. In particular, the following sets of multivariate analyses will attempt to delineate the gendered trajectories that lead from strain to deviant coping strategies.

Strain, Negative Emotions, and Conditioning Variables on Violence, by Gender.

While the current analyses do not test for the significance gender differences in coefficients *across* models, I present a thorough examination of the causal pathways that lead from strain to deviance, disaggregated by gender. Table 5.13 presents negative binomial regression coefficients of violence regressed on all variables, disaggregated by gender. Incidence rate ratios reveal some notable differences within gendered models. In particular, Hispanic males, relative to white males, are expected to have a higher rate of violent behaviors, while there are no significant differences for Hispanic females. Moreover, while mother's educational level is a significant, negative predictor of only male violence, residing in a two-parent household has more consequential effects in preventing female violence.

As viewed in Table 5.13, some interesting findings emerge, related to Hypothesis Four. First, while strain exerts direct effects on Wave II violence for both males and females, only two of the five strain measures significantly predict female violence.

Table 5.13 Survey-Corrected Negative Binomial Regression for Violence Regressed On Strain, Negative Affect, Conditioning Effects, and Controls, By Gender.

Variables	Model 1		Model 2		Model 3	
	Males	Females	Males	Females	Males	Females
	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)	Exp (B) (SE)
Age	.96* (.02)	.90** (.02)	.97 (.01)	.89** (.02)	.93** (.02)	.85** (.02)
Latino	1.29** (.11)	1.15 (.15)	1.30** (.11)	1.11 (.13)	1.33** (.10)	1.14 (.15)
Black	1.06 (.09)	1.18 (.12)	1.08 (.08)	1.14 (.12)	1.13 (.08)	1.26* (.13)
Asian	1.03 (.20)	1.22 (.20)	1.04 (.20)	1.21 (.22)	1.10 (.21)	1.24 (.21)
Indian	1.33 (.20)	1.24 (.16)	1.33 (.20)	1.27 (.20)	1.32 (.19)	1.28 (.17)
Education	.92** (.02)	.94 (.03)	.93** (.02)	.96 (.04)	.94* (.03)	.98 (.03)
Pub Assist	1.02 (.08)	1.10 (.12)	1.01 (.08)	1.09 (.13)	1.02 (.08)	1.03 (.12)
Res. Parent	1.12 (.07)	1.25** (.10)	1.12 (.07)	1.24* (.11)	1.12 (.11)	1.08 (.10)
WI Violence	1.47** (.03)	1.90** (.09)	1.47** (.03)	1.86** (.07)	1.42** (.03)	1.80** (.08)
Victimization	1.58** (.11)	1.26* (.12)	1.58** (.11)	1.25* (.13)	1.50** (.11)	1.19 (.12)
Health	1.24* (.11)	1.07 (.12)	1.27* (.12)	.90 (.10)	1.24* (.12)	.90 (.10)
School Strain	1.21** (.05)	1.17** (.06)	1.21** (.05)	1.13* (.07)	1.16** (.05)	1.09 (.06)
Peer/Parent Suicide	.99 (.07)	1.12 (.11)	.99 (.07)	1.08 (.09)	.94 (.07)	1.05 (.10)
Trad. Strain	1.04 (.03)	1.06 (.05)	1.04 (.03)	1.05 (.05)	1.03 (.03)	1.05 (.05)
Anger			1.19** (.08)	1.20* (.10)	1.14 (.08)	1.11 (.08)
Depression			.92 (.11)	1.38** (.15)	.88 (.11)	1.34** (.18)

* $p < .05$, ** $p < .01$

Table 5.13 (cont'd)

Variables	Model 1		Model 2		Model 3	
	Males IRR (SE)	Females IRR (SE)	Males IRR (SE)	Females IRR (SE)	Males IRR (SE)	Females IRR (SE)
Self Esteem					1.01 (.06)	1.18* (.08)
Diff Assoc.					1.07** (.01)	1.06** (.02)
Soc Support					.93 (.07)	.84* (.07)
Par. Attach					1.04 (.08)	.93 (.07)
Par Involve					1.01 (.02)	1.00 (.03)
Schl. Attach					.98 (.05)	.90* (.04)
Schl. Involve					.88** (.04)	.86** (.05)
Religiosity					1.01 (.01)	.97** (.01)
Likelihood Ratio	653.36**	435.30**	648.44**	430.09**	617.07**	417.64**

* $p < .05$, ** $p < .01$

Conversely, three (physical victimization, school-related strain, poor general health) of the strain measures are significant for males. Additionally, physical victimization is a more robust predictor of male violence than female violence, both in terms of significance (IRR is significant at .01 level for males, only the .05 level for females) and magnitude (IRR of 1.26 for females, 1.58 for males). The findings also reveal a gendered effect of poor health on violence, as the baseline incident rate ratio for males is statistically significant, and positive, while the coefficient for females is insignificant.

Pertaining to Hypotheses Five and Six, an interesting finding emerges in Model 2, after including measures of negative affect. While, consistent with Hypothesis Five, anger significantly predicts both male and female violence, depression exerts

astatistically significant impact on *female*, but not male, violence. This suggests that depression is positively associated with violent delinquent coping, for females, a finding that largely runs counter to Hypothesis Six. While there certainly appears some gendering with regard to the relationship between same-directed effects for negative affect on deviant coping, with males more likely to experience this same-directed effect, there is little in the way of evidence that suggests the potential mediating effects of negative affect work differently across gender (Hypothesis Five). The preceding evidence does indicate that there is at least some gendering in the relationship between strain, negative affect, and deviant coping.

The fully nested model (Model 3) tests for any potential gender differences in the independent effects of conditioning variables on violent outcomes. While there are gendered differences across the dummy variables for race, with Hispanic males demonstrating a higher expected count of violent behavior relative to white males, and black females exuding higher violent outcomes relative to white females, the principal gendered effects appear among the strain variables. In particular, all sources of strain fail to reach statistical significance in the fully specified model for female violence, while depression maintains a strong, significant effect on violence—a finding that potentially suggests that there are *some* possible mediating effects for females. Conversely, school-related strain, poor general health, and physical victimization continue to exert significant, positive effects on male violence. Table 5.13 additionally reveals some gendering with regard to the relationship between conditioning variables and violence. For instance, self-esteem is positively related to female, but not male violence. The finding of a positive effect of self-esteem on deviant outcomes is not uncommon (for

justification see Asseltine et al. 2000). Moreover, social support and school involvement have significant, independent violence-suppressing effects for females, but not males. Most relevant to the current analysis, and in support of Hypothesis Eight, the standardized religiosity measure exerts a significant, negative effect on the expected count of violent behavior for females. The incidence rate ratio of .97 reveals that each unit change in standardized religiosity is associated with an expected decrease in the count of violent behaviors by a factor of .97.

Strain, Negative Emotions, and Conditioning Variables on Frequent Alcohol Use, by Gender.

Table 5.14 presents negative binomial regression results on the gendering of the relationship between strain, negative affect, conditioning variables, and the frequent use of alcohol. The first model provides evidence that suggests, while generally supportive of Hypothesis Five, the effects of strain on frequent alcohol use vary significantly by gender. In particular, while physical victimization is a significant correlate of frequent alcohol use across gender, the incidence rate ratio for males is significant beyond the .01 level, whereas the female coefficient only attains significance at the .05 level.

Consequently, school-related strain and a peer/parent suicide attempt are independently associated with Wave II frequent alcohol use, for females only. For instance, females that had a close friend or family member attempt suicide in the year preceding the Wave I interview are expected to have a rate of frequent alcohol use 72 percent higher than female respondents that did not experience a peer or parent suicide attempt. Collective

Table 5.14 Survey-Corrected Negative Binomial Regression for Frequent Alcohol Use Regressed on Strain, Negative Affect, Conditioning Effects, and Controls, By Gender.

Variables	Model 1		Model 2		Model 3	
	Males	Females	Males	Females	Males	Females
	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)
Age	1.31** (.04)	1.21** (.05)	1.32** (.04)	1.20** (.05)	1.19** (.03)	1.14** (.05)
Latino	1.02 (.14)	.73 (.13)	1.06 (.15)	.70 (.13)	1.07 (.16)	.80 (.15)
Black	.50** (.07)	.57** (.11)	.53** (.08)	.54** (.10)	.61** (.09)	.62* (.12)
Asian	.48 (.10)	.37 (.20)	.48 (.21)	.34 (.19)	.54 (.24)	.35* (.18)
Indian	.66 (.16)	1.37 (.36)	.62 (.16)	1.35 (.33)	.67 (.15)	1.38 (.37)
Education	.95 (.05)	.95 (.05)	.95 (.05)	.98 (.05)	.99 (.05)	.96 (.05)
Pub. Assist	.98 (.21)	.76 (.20)	.96 (.19)	.77 (.20)	.97 (.16)	.68 (.18)
Res. Parent	1.24 (.17)	.95 (.12)	1.22 (.16)	.94 (.13)	1.03 (.15)	.75 (.13)
W I Alcohol Use	2.16** (.13)	2.95** (.19)	2.18** (.13)	2.90 (.20)	1.72** (.10)	2.21** (.15)
Victimization	1.55** (.19)	1.43* (.22)	1.55** (.18)	1.36* (.20)	1.26* (.14)	1.21 (.17)
Health	1.32 (.20)	.97 (.13)	1.43* (.24)	.75 (.11)	1.26 (.18)	.71* (.10)
School Strain	.95 (.05)	1.54** (.15)	1.13 (.09)	1.43** (.15)	1.03 (.09)	1.30** (.12)
Peer/Parent Suicide	1.28 (.17)	1.72** (.22)	1.29 (.17)	1.63** (.21)	1.11 (.14)	1.39* (.18)
Trad. Strain	.95 (.05)	1.00 (.07)	.93 (.05)	.99 (.07)	.92 (.04)	1.00 (.13)
Anger			1.47** (.13)	1.16 (.15)	1.31** (.12)	1.00 (.13)
Depression			.82 (.13)	1.69** (.25)	.83 (.13)	1.63** (.28)

* $p < .05$, ** $p < .01$

Table 5.14 (cont'd)

Variables	Model 1		Model 2		Model 3	
	Males IRR (SE)	Females IRR (SE)	Males IRR (SE)	Females IRR (SE)	Males IRR (SE)	Females IRR (SE)
Self Esteem					1.09 (.10)	1.27* (.13)
Dif. Assoc.					1.21** (.02)	1.22** (.03)
Soc. Support					.99 (.11)	.96 (.13)
Par. Attach					1.02 (.10)	.81 (.10)
Par. Involve					.95 (.03)	1.02 (.04)
Schl Attach					.91 (.07)	1.01 (.07)
Schl Involve					.85* (.07)	1.02 (.08)
Religiosity					1.00 (.01)	1.01 (.01)
Likelihood Ratio	223.08**	303.65**	219.57**	283.57**	154.76**	237.11**

* $p < .05$, ** $p < .01$

these findings indicate that only one source of strain offers consequential explanatory power to the prediction of frequent male alcohol use, while there are numerous strained pathways that lead to same behavioral outcome for females.

As can be observed in Model 2, there is some degree of gendering in relation to Hypothesis Five. While Wave I negative affective states do have a positive, significant relationship on frequent alcohol use, the effects of the negative emotions do vary significantly by gender. For instance, anger, but not depression, is predictive of male frequent alcohol use. Conversely, depression, but not anger, is a highly significant correlate of female alcohol use. Hypothesis Five also predicts that negative affective states will render the relationship between strain and deviance spurious. As clearly

observed in Model 2, there is no evidence of mediating effects by gender. However, there is evidence that offers corroboration for a gendering effect in Hypothesis Six. While the same-directed effects thesis cannot be supported for males, due to the fact that anger (outer-directed emotion) exerts significant effects on frequent alcohol use (inner-directed behavioral response), this finding is largely confirmed for females. In particular, female depression has a significant, positive effect on female frequent alcohol use.

When introducing conditioning variables to the negative binomial regression equation (Model 3), there are only slight gender differences in relation to Hypothesis Seven, but not Hypothesis Eight. In particular, school involvement is negatively related to male, but not female deviance. As was the case with violent behavior, self-esteem is positively related to frequent alcohol use for females, but not for males. Inconsistent with Hypothesis Eight, the coefficient for standardized religiosity is insignificant across gender, indicating that there is no gendering to the relationship between religiosity and frequent alcohol use. Consequently, the strain measures (physical victimization for males, school-related strain, and peer/parent suicide attempt for females) continue to exert significant effects on male and female alcohol use. Additionally, controlling for Wave I alcohol use significantly aids in predicting Wave II alcohol use, given the fact that the incidence rate ratio for the former coefficient is a strong, significant predictor of the latter across all three models.

Strain, Negative Emotions, and Conditioning Variables on Drug Use, by Gender

Results for drug use regressed on strain, negative emotions, conditioning variables, and conditioning variables are presented in Table 5.15. There is little in the

way of a gender effect for the direct relationship of strain on drug, use as physical victimization and poor general health are significant predictors of drug use in the baseline models for both genders. While at least one measure of negative affect (anger) is a significant, positive predictor of drug use across gender-and therefore in line with Hypothesis Five-the same directed effects are not found (Hypothesis Six) for either gender, as anger, not depression, significantly predicts drug use. In contrast, there appears to be a partial gendering effect for Hypothesis Five, as the inclusion of the negative emotional variables reduces the health/drug use relationship to insignificance for females, but not for males. That being said, physical victimization maintains a statistically significant, positive relationship on drug use for males and females, even with the inclusion of anger and depression to the model.

Results suggest little support in relation to a gendered effect for Hypotheses Seven and Eight, although it does appear that social support and parental attachment have differential effects on drug use. In particular, parental attachment is a significant

Strain, Negative Emotions, and Conditioning Variables on Suicide Ideation, by Gender

Logistic regression results testing gendered effects for the relationship between all variables on suicide ideation are presented in Table 5.16. Results reveal a slight gender effect regarding the relationship between age and suicide ideation. For females, a

Table 5.15 Survey Corrected Logistic Regression for Drug Use on Strain, Negative Affect, Conditioning Effects, and Controls, by Gender.

Variables	Model 1		Model 2		Model 3	
	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)
Age	1.33** (.07)	1.08 (.07)	1.33** (.07)	1.08 (.07)	1.10 (.07)	.95 (.08)
Latino	1.41 (.35)	1.00 (.32)	1.41 (.35)	.95 (.30)	1.52 (.44)	1.04 (.32)
Black	.49* (.14)	.28** (.10)	.49* (.14)	.27** (.10)	.70 (.22)	.51 (.19)
Asian	.85 (.32)	.61 (.38)	.85 (.32)	.61 (.38)	1.09 (.38)	.73 (.44)
Indian	.36 (.20)	.15** (.11)	.36 (.20)	.15** (.11)	.47 (.28)	.15** (.11)
Education	1.18* (.09)	1.00 (.09)	1.20* (.09)	1.02 (.10)	1.19 (.09)	.97 (.09)
Pub. Assist	.78 (.23)	1.39 (.64)	.76 (.23)	1.31 (.60)	.76 (.23)	.98 (.36)
Res. Parent	1.42 (.29)	1.06 (.32)	1.39 (.28)	1.04 (.31)	.84 (.23)	.79 (.22)
WI Drug Use	12.66** (2.73)	19.08** (4.76)	12.47** (2.75)	18.48** (4.67)	4.83** (1.25)	6.64** (1.88)
Victimization	2.41** (.45)	2.38** (.63)	2.36** (.44)	2.37** (.63)	1.67** (.31)	1.77* (.44)
Health	1.76* (.43)	1.68* (.40)	1.84* (.50)	1.58 (.40)	1.45 (.41)	1.49 (.40)
School Strain	1.19 (.15)	1.22 (.25)	1.18 (.15)	1.21 (.24)	.92 (.14)	.98 (.20)
Peer/Parent Suicide	1.20 (.25)	1.70 (.52)	1.18 (.25)	1.67 (.49)	.96 (.24)	1.32 (.38)
Trad. Strain	.93 (.09)	1.06 (.13)	.92 (.09)	1.05 (.13)	.88 (.08)	1.09 (.13)
Anger			1.67** (.31)	1.62* (.39)	1.36 (.25)	.115 (.27)
Depression			.86 (.25)	1.03 (.32)	.60 (.18)	.54 (.19)

* $p < .05$, ** $p < .01$

Table 5.15 (cont'd)

Variables	Model 1		Model 2		Model 3	
	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)
Self Esteem					.85 (.15)	.86 (.19)
Diff Assoc.					1.48** (.06)	1.53** (.05)
Soc Support					.97 (.18)	.58* (.15)
Par Attach					.70* (.12)	.76 (.16)
Par Involve					1.01 (.06)	1.09 (.09)
Schl Attach					1.03 (.13)	.88 (.13)
Schl Involve					1.11 (.14)	.98 (.16)
Religiosity					1.03 (.13)	.93 (.04)
-2 LL	-838.18	-685.28	-831.48	-680.84	-726.48	-
Model Chi-Square	285.93**	201.03**	279.45**	215.38**	376.92**	562.39 343.85**
Pseudo R- Square	.23	.21	.24	.21	.34	.35

* $p < .05$, ** $p < .10$

one unit increase in age decreases the odds of suicidal thoughts by a factor of .83.

Conversely, the odds ratio coefficient for age is insignificant for males. This indicates that, for females, the odds of thinking about suicide decrease with age. There appears to be no gendered effect, in the reduced model, regarding the relationship between strain and suicide ideation. Poor general health and a suicide attempt by a close friend or family member are independent, significant predictors of suicide ideation. Table 5.16 reveals mixed results for gender differences in the relationship among strain, negative affective states, and suicidal thought. In particular, partial support for Hypothesis Five

Table 5.16 Survey Corrected Logistic Regression for Suicide Ideation on Strain, Negative Affect, Conditioning Effects, and Controls, by Gender.

Variables	Model 1		Model 2		Model 3	
	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)
Age	1.01 (.04)	.83** (.04)	.99 (.04)	.81** (.04)	.97 (.05)	.81** (.04)
Latino	1.43 (.34)	.98 (.19)	1.40 (.33)	.92 (.17)	1.42 (.34)	.91 (.17)
Black	.61* (.15)	.67* (.12)	.60* (.15)	.64* (.11)	.64 (.17)	.63** (.11)
Asian	1.04 (.35)	1.16 (.39)	1.00 (.34)	1.10 (.36)	.98 (.35)	1.11 (.36)
Indian	1.42 (.42)	.71 (.19)	1.39 (.41)	.70 (.19)	1.35 (.42)	.71 (.19)
Education	.97 (.07)	.98 (.06)	.99 (.07)	1.01 (.06)	.98 (.07)	1.02 (.06)
Pub. Assist	.89 (.26)	1.12 (.25)	.85 (.23)	1.11 (.25)	.82 (.23)	1.10 (.25)
Res. Parent	1.08 (.18)	1.19 (.16)	1.07 (.18)	1.17 (.15)	.96 (.23)	1.19 (.18)
WI Suicide Ideation	9.46** (1.59)	5.18** (.62)	8.59** (1.52)	4.66** (.59)	8.41** (1.55)	4.59** (.58)
Victimization	1.05 (.21)	.95 (.19)	1.01 (.20)	.92 (.20)	1.01 (.20)	.92 (.19)
Health	1.66** (.31)	2.17** (.33)	1.36 (.31)	1.65** (.27)	1.36 (.30)	1.67** (.27)
School Strain	1.23 (.14)	1.11 (.08)	1.16 (.13)	1.04 (.08)	1.08 (.15)	1.01 (.10)
Peer/Parent Suicide	1.58* (.31)	1.83** (.22)	1.60* (.30)	1.79** (.21)	1.58* (.31)	1.78** (.22)
Trad. Strain	.93 (.08)	1.10 (.09)	.92 (.07)	1.08 (.08)	.90 (.07)	1.07 (.08)
Anger			1.14 (.19)	1.19 (.17)	1.08 (.19)	1.17 (.17)
Depression			1.60 (.43)	1.77** (.28)	1.21 (.37)	1.63** (.27)

* $p < .05$, ** $p < .01$

Table 5.16 (cont'd)

Variables	Model 1		Model 2		Model 3	
	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)	Males OR (SE)	Females OR (SE)
Self Esteem					.83 (.13)	.92 (.09)
Diff. Assoc.					.99 (.03)	1.00 (.02)
Soc. Support					.70* (.12)	.95 (.12)
Par. Attach					.94 (.16)	1.03 (.14)
Par. Involve					.97 (.05)	1.00 (.04)
Schl. Attach					.95 (.10)	.99 (.08)
Schl Involve					.96 (.13)	.89 (.08)
Religiosity					1.00 (.02)	1.01 (.02)
-2 Log Likelihood	-1123.28	-1829.51	-1119.59	-1689.67	-1109.45	- 1814.00
Model Chi-Square	259.8**	328.82**	264.7**	336.45**	272.34**	342.47**
Pseudo R- Square	.16	.16	.17	.16	.17	.16

* $p < .05$, ** $p < .10$

(the mediating effects of negative affect on the strain/deviance relationship), and full support for Hypothesis Six (Wave I negative emotions exert stronger effects on same-directed deviance) is found in Model 2. These confirmatory results are primarily found in the models predicting female suicide ideation. The female odds ratio for depression (1.77) is a potent, significant predictor of suicide ideation, and therefore lends credence to the notion that same-directed effects exist between negative emotions and deviant outcomes, by gender. Conversely, the peer/family suicide measure, and the poor general health measure remain significant when including negative affect to the model, and

therefore fails to support Hypothesis Five. It does appear, however, that there may be potential mediating effects for males, as the inclusion of negative emotions to the regression model, reduces the coefficient for general health insignificant.

Regarding the final sets of hypotheses, there is little evidence of the gendering of conditioning effects. Of all the conditioning theoretical variables, significant gender differences only emerge for social support. In particular, social support appears to independently buffer males, but not females, from suicide ideation.

The preceding models offer mixed support regarding gendered pathways in the relationship between strain, negative emotions, conditioning variables, and deviance. Across the four different deviant outcomes, results suggest that different forms of strain are more effective predictors of male or female deviance. It appears that the greatest gendered effects, regarding the effects of strain on deviance, were witnessed for frequent alcohol use. While physical victimization predicts male alcohol use across all three models, it fails to significantly affect female frequent alcohol use. Moreover, physical victimization is the *only* source of strain that shares a significant relationship with male alcohol use in the fully specified model (although health exerts a positive effect in Model 2 only). In contrast, poor general health (in the opposite of the intended direction), school-related strain, and peer/parent suicide attempt exerts significant effects on female alcohol use. This indicates that the pathways leading from strain to deviance are somewhat gendered, but this is largely contingent on the type of deviance being examined. Another finding of interest is that depression *and* anger are related to female violence—a finding that runs counter to Hypothesis Five. There also appears to be salient gender differences in the role occupied by depression in relation to the strain/deviance

connection. Depression exerts a significant effect on female, but not male, violence (Table 5.13), alcohol use (Table 5.14), and suicide ideation (Table 5.16). The former finding strictly contradicts Hypothesis Three, which suggests that inner-directed negative emotions (i.e. depression) will negatively be related to violent coping mechanisms, which incidentally accounts for the gender gap in violent offending (Broidy and Agnew, 1997). These results collectively point to the fact that depression plays a particularly integral role in the pathway leading from strain to deviance for females.

Section VI: The Interaction Effects of Strain and Religiosity on Deviant Coping Strategies, by Gender

While results presented in Section III of this chapter did not offer a substantial degree of confirmatory evidence regarding the moderating effects of religiosity on the strain/deviance relationship, it is plausible (see Jang and Johnson, 2005) that there is a gendered component to the conditioning effects of religiosity. To test this supposition, interaction terms, identical to those constructed in Section III, were again employed to assess if the moderating effects of religiosity are contingent upon gender. The following series of analyses-specifically assessing Hypothesis Eight-are graphically illustrated in Tables 5.17-5.20. I follow the modeling strategy adopted in Section III, in which interaction terms for religiosity and the five strain indicators were separately entered into the logistic and negative binomial models.

Moderating Effects on Violence

The negative binomial model estimating the potential moderating effects of religiosity on the relationship between strain and violent behavior, disaggregated by gender are presented in Table 5.17. The results clearly demonstrate a relative paucity of evidence supporting the conditioning effects of religiosity. In particular, it appears that there were no significant gender differences regarding the interaction terms, with one slight qualification: the interaction term for traditional strain and religiosity was marginally significant (beyond the .10 level) for models predicting female violence. While this effect was rather trivial (IRR of .98), it suggests that individuals that experience traditional strain are shielded from violent coping mechanisms at high levels of religiosity. This finding specifically offers marginal support for the buffering effects of religiosity on the relationship between traditional strain (the disjunction between educational aspirations and expectations) and female violence.

Moderating Effects on Frequent Alcohol Use

Interaction terms for religiosity and each of the five indicators of strain were employed to test for moderating effects of religiosity with regard to frequent alcohol use (see Table 5.18). The incidence rate ratios offer some unexpected, confounding results. In particular, while only attaining marginal significance (beyond the .10 level), the coefficients for the physical victimization/religiosity interaction were positively related to frequent alcohol use for both males and females. This indicates that religiosity serves to aggregate, rather than buffer, the relationship between physical victimization and religiosity. While this finding is rather puzzling, it must be acknowledged that the

Table 5.17 Survey-Corrected Negative Binomial Regression Results for Interaction Analyses Predicting Violent Offending, by Gender.

Interaction Terms	Males		Females	
	IRR	SE	IRR	SE
Physical Victimization * Religiosity	1.00	.01	1.03	.02
Poor General Health * Religiosity	1.00	.02	1.01	.02
School-Related Strain * Religiosity	1.00	.01	1.01	.01
Peer/Parent Suicide * Religiosity	.99	.02	1.01	.02
Traditional Strain * Religiosity	1.00	.01	.98*	.01

* $p < .05$, ** $p < .10$

Table 5.18 Negative Binomial Regression Results for Interaction Analyses Predicting Frequent Alcohol Use, by Gender.

Interaction Terms	Males		Females	
	IRR	SE	IRR	SE
Physical Victimization * Religiosity	1.04 (.10)	.02	1.06 (.10)	.03
Poor General Health * Religiosity	.98	.03	.99	.03
School-Related Strain * Religiosity	1.00	.01	.99	.02
Peer/Parent Suicide * Religiosity	.98	.03	1.05	.03
Traditional Strain * Religiosity	1.02*	.01	.99	.01

* $p < .05$, ** $p < .10$

coefficient is not statistically significant at the .05 level. However, there the interaction term for traditional strain and religiosity, which is also positive, does in fact attain statistical significance in the male model. This positive coefficient demonstrates that males who experience traditional strain can be expected to have a rate 1.02 times greater for frequent alcohol use than those who are low in traditional strain and religiosity, net of

all controls. While it must be acknowledged that this finding is significant, and is in the opposite of the hypothesized direction, the incidence rate ratio is near one, and is rather lacking in terms of substantive significance.

Moderating Effects on Drug Use

Results presented in Table 5.19 fail to offer any support for the moderating effects of religiosity on the strain drug use relationship, for either males or females. This finding contradicts Hypothesis Eight, which predicts that religiosity will play a more consequential, deviance-inhibiting role in the pathway leading from strain to *female* deviance. The results appear to be largely insignificant across gender.

Moderating Effects on Suicide Ideation

Table 5.20 reveals that, similar to drug use, there appears to be no evidence for a gendered, moderating effect of religiosity on the strain/suicidal thoughts relationship. Odds ratio for each interaction are insignificant, for both males and females. The last two findings are particularly troublesome, given the expectation-although not explicitly hypothesized-that the moderating effects of religiosity would be larger when considering “ascetic” (i.e. suicide ideation, drug/alcohol use) offenses. Moreover, although the interaction between physical victimization and religiosity were significant predictors of one form of ascetic deviance (alcohol use) for both males and females, the coefficients were positive.

Table 5.19 Logistic Regression Results for Interaction Analyses Predicting Drug Use, by Gender.

Interaction Terms	Males		Females	
	IRR	SE	IRR	SE
Physical Victimization * Religiosity	1.01	.05	1.07	.06
Poor General Health * Religiosity	.94	.07	1.06	.05
School-Related Strain * Religiosity	1.04	.03	1.04	.03
Peer/Parent Suicide * Religiosity	1.01	.07	.98	.07
Traditional Strain * Religiosity	.99	.02	.97	.02

* $p < .05$, ** $p < .10$

Regarding the gendering of the moderating effects of religiosity, the aforementioned results offer very little in the way of validation. It appears that where gender differences in the conditioning effects of religiosity do exist, they are in an unexpected direction. Furthermore, the only theoretically-expected moderating effect found for the interaction between female traditional strain and religiosity-only approached statistical significance. As was the case with the Johnson and Morris (2008) study, this data fails to find any significant gendering to the moderating effects of religiosity on strain and deviant coping.

The preceding paragraphs offered a detailed articulation of the relationship between strain, negative affective states, conditioning variables, and deviant coping outcomes among a longitudinal, nationally representative sample of adolescents. Results offered strong support for the independent, deviance-generating properties of strain, but only mixed support regarding the trajectories leading from strain to deviant coping mechanisms. Additionally, there does appear to be some gendering with regard to the

relationship between these central concepts. While this concludes the results section of this project, the concluding chapter will provide the following: (1) a reiteration of the purpose of this study, along with the guiding research question posed by this research; (2) a synopsis of the principal findings of the study, along with a delineation of the contributions (both conceptually and methodologically) made by this research to the scientific study of religion and criminology, in general, and to the extant GST literature in particular; (3) a discussion of the limitations of the current research and suggestions for future research within this area of scholarship.

Table 5.20 Logistic Regression Results for Interaction Analyses Predicting Suicide Ideation, by Gender.

Interaction Terms	Males		Females	
	IRR	SE	IRR	SE
Physical Victimization * Religiosity	.97	.05	.94	.04
Poor General Health * Religiosity	1.03	.05	1.02	.03
School-Related Strain * Religiosity	1.01	.02		
Peer/Parent Suicide * Religiosity	.98	.04	1.00	.02
Traditional Strain * Religiosity	1.02	.02	.99	.01

* $p < .05$, ** $p < .10$

CHAPTER VI

DISCUSSION AND CONCLUSION

The primary purpose of the current chapter is to revisit the original research question, followed by a discussion of the relevant findings from the study, and how they relate to the research question. Secondly, an elaboration on the potential shortcomings or liabilities of the study will ensue, followed by an articulation of the contributions of the current study to the extant GST literature. This chapter concludes with suggestions for future research endeavors in this general tradition.

The overarching question that was addressed in this research was “does religiosity significantly buffer the deviance-generating properties of strain-induced negative affect”? As indicated throughout this study, previous research in this area (Jang and Johnson 2003, 2005; Johnson and Morris 2008) has generated equivocal results. The genesis of scholarship within this area of GST can be traced to the seminal works of Jang and Johnson-who garnered evidence indicating that religiosity serves a protective, deviance-inhibiting function in the relationship between strain, negative affect, and deviant coping mechanisms. Specifically, while religiosity did not exhibit deviance-buffering capacities in relation to the direct effect of strain on either negative emotions or deviance, religiosity directly moderated the relationship between inner-directed negative emotions and deviant coping mechanisms among a cross-sectional sample of African Americans. This foundational work suggested that religiosity serves as a protective factor primarily when

observing the more proximate relationship within GST of strain-induced negative affect on deviant behavioral adaptations. Additionally, elevated levels of religiosity significantly ameliorated, but did not eradicate, the effects of strain-generated negative effect on deviant coping mechanisms, among a cross-sectional sample of African American adults. Conversely, other studies in this area have garnered little to no support for the moderating effects of religiosity on the relationship between strain, negative emotions, and deviant/criminal behavior (Piquero & Sealock, 2000; Johnson and Morris, 2008). Specifically, Piquero and Sealock (2000) found that spiritual coping had little to no effect on offending among a sample of institutionalized adolescents, and more consequently, Johnson and Morris (2008) found only trivial moderating effects for religiosity on the relationship between strain (physical victimization, school problems) on property and violent delinquency. The latter study is of particular relevance to the current work due to the fact that the Johnson and Morris (2008) piece offers the first nationally representative, longitudinal examination of the Jang and Johnson thesis.

The present study employed the use of a nationally representative, longitudinal sample of adolescents for the primary purposes of offering an integral augmentation to the extant GST literature-particularly in the area of the identification of key conditioning variables that are alleged to moderate the strain/crime relationship (Jang and Johnson 2003, 2005). More specifically, the present study sought to extend pivotal work in the area of strain, negative emotions, religiosity, and deviance by offering the most rigorous examination of the Jang/Johnson (2003, 2005) thesis to date. The present research attempts to accomplish this task by examining whether the conditioning effects of religiosity on the strain/crime relationship operate in the same manner among a

representative sample of the population as was the case when employing the use of a highly religious sample (Jang and Johnson 2003, 2005). As previously acknowledged, this is not the first such examination of this particular hypothesis, but this work transcends the Johnson and Morris in a number of key facets, primarily with regard to methodological specification of key concepts. First, the current study included numerous sources of strain (as opposed to two), and introduced at least one source of strain (poor general health) that has previously been under-represented in the GST literature. Moreover, I attempt to address what was potentially the most glaring shortcoming in the Johnson and Morris (2008) examination of the Jang/Johnson thesis by testing for the potential *mediating* effects of negative affective states on the relationship between strain and crime. Consequently, the Johnson and Morris (2008) piece neglected the mediating effects of strain-induced negative emotions, which are consistently advanced in empirical assessments of GST to be the principal causal mechanism leading from strain to deviant/criminal coping strategies (see Agnew 1992; Paternoster and Mazzerolle, 1994; Mazzerolle and Piquero, 1998; Mazerolle et al. 2003). While the Add Health does not have a measure of individual-reported situational anger-the type of anger most consequential to GST (see Mazerolle et al. 2003)-, there is precedent in using the parental perception measure of bad temper as a plausible proxy (see Kaufman, 2009). Yet another advantage of the current study lies in the enhanced validity of the religiosity measure. Specifically, this research includes numerous participatory (church attendance, participation in religious activities, prayer) and non-participatory dimensions of religiosity (religious salience, fundamentalism) that go beyond the operationalization strategy employed (participation, salience) in the previous examination of this topic

(Johnson and Morris, 2008). Lastly, in order to observe the general properties of GST, I include a number of outcomes that run the gamut from violent delinquency to suicide ideation. Not only is this specification noteworthy when testing any general theory of crime, but research emanating from the sociology of religion has consistently indicated that religiosity is more likely to have a consequential impact on preventing behaviors that violate ascetic, rather than secular, norms (Burkett and White, 1974). A liability in previous scholarship-particularly relating to the Johnson and Morris (2008) study-in this area is that this specification was not taken into account when measuring deviant outcomes (Johnson and Morris used property and violent delinquency as dependent variables). After taking the preceding issues into consideration, it is posited that this work represents the most robust estimation to date of the foundational work of Jang and Johnson.

There were a number of additional hypotheses-extracted from the Jang and Johnson (2003, 2005) research-that were examined in the current study concerning “same-directed” effects between negative emotions and coping mechanisms. In particular, it was hypothesized that certain types of strain (stressful life events such as poor general health, suicide attempts on the part of friends/family members, the disjunction between expectations and aspirations) would exert stronger effects on “inner-directed” (i.e. depression) negative emotions, while negative relations with others (i.e. physical victimization, school-related strain) would be more commonly linked to “outer-directed” negative affective states (i.e. anger). Furthermore, it was tested to see whether same-directed effects (regarding negative emotions on deviant coping strategies) were present, with inner-directed negative emotions having a stronger effect on more inward-

directed coping mechanisms (e.g. suicide ideation, drug/alcohol use), and vice-versa for outer-directed emotions and coping mechanisms.

Aside from the specific estimation of the Jang and Johnson studies, the current study offers a longitudinal examination of some of the central propositions extracted from General Strain Theory. For instance, I specifically assessed the independent effects of strain on both negative affective states, as well as deviant coping mechanisms. In line with the central tenets of GST (Agnew, 1992), I tested for the potential mediating effects of negative emotions (anger and depression) on the strain/deviance relationship, with the specific expectation that the inclusion of strain-induced negative affect would render the relationship between strain and deviant coping behaviors insignificant.

Lastly, this research offers major contributions to theorizing within GST by testing key propositions derived from the watershed study of Broidy and Agnew (1997), regarding potential gendered trajectories in the pathways leading from strain to deviant coping mechanisms. In particular, it was hypothesized that females, consistent with other research in the area (Broidy and Agnew, 1997; Jang and Johnson, 2005; Jang 2007) disproportionately respond to strain with inner-directed negative emotions, while males are more inclined to respond with outer-directed negative affect (i.e. anger). This is consequential due to the fact that inner-directed negative emotions (i.e. depression) are less likely to lead to external, outer-directed deviant coping strategies (i.e. violence), and potentially accounts for the higher proclivity among males to adapt aggressive responses to strain (Broidy, 2001; Broidy and Agnew, 1997; Hay, 2003; Jang, 2007; Jang and Johnson, 2005; Piquero and Sealock, 2004).

The following paragraphs will present a comprehensive summary of the principal findings of this research, followed by a discussion of the liabilities inherent in this project, and will conclude with a discussion of the contributions of this research to the larger GST paradigm.

Summary of Findings

There were a number of hypotheses examined in this study, and Table 6.1 offers a summary of the degree of support garnered for each hypothesis. As indicated in Table 6.1, there was more supportive evidence for the hypothesis that estimated the effects of strain on negative affect and deviance, respectively. Strain was found to be a strong, positive predictor of both measures of negative affective states. In particular, four of the five strain indicators exerted significant effects on parental reports of bad mood, with three (victimization, poor general health, school-related strain) being highly significant (beyond the .01 level of significance). Additionally, all five strain measures wielded a significant, positive impact on the experience of depressive symptoms, with poor general health clearly emerging as having the most predictive power. This finding is particularly noteworthy due to the fact that a previously neglected (see Jang, 2007 for an exception) source of strain-poor general health-appears to be pivotal in shaping the mechanisms within GST that have the most proximate impact on deviant coping strategies. These findings offer further unequivocal substantiation to the premise that the experience of strain leads to a host of negative affective states (Agnew, 1992; Agnew and White, 1992; Brezina, 1996; Kaufman, 2009)

The second hypothesis posed by this research, primarily derived from Agnew's (2001) paradigm-shifting extension to GST, is related to the relationship between particular forms of strain and the negative affective states left in their wake. In particular, Agnew famously cautioned the criminological community that certain strains are more "criminogenic" than others, due to the negative affective states that they engender. It follows that what Agnew termed "unjust treatment" (i.e. negative relations with others) is the form of strain that should be most commonly linked to violent behavioral outcomes due to the impact of said strain on the mediating negative affective state of anger. More specifically, when an individual is treated in a negative or an unjust manner by others, it is more likely to induce externalized negative emotions (e.g. anger), which in turn are more likely to lead the individual to choose an other-directed, "externalized" behavioral coping strategy (e.g. violence). Conversely, individuals that experience strain that does not meet the above-mentioned specification (e.g. the strain was not viewed as unjust) of fit Agnew's criteria of negative relations with others, and would be more strongly linked to outer-directed negative emotions (i.e. anger), while the remaining three forms of strain would have stronger effects on "inner-directed" negative emotions (i.e. depression). The relevance of this hypothesis within GST is further cemented due to the effects that the

Table 6.1 Hypotheses and Summary of Relevant Findings.

Hypothesis	Results
Hypothesis I: Wave I Strain will be a significant, positive predictor of Wave I Negative Affect	Overwhelming Support: three of the five strain measures predicted anger, and all five measures significantly predicted depressive symptoms
Hypothesis II: Wave I “stressful life events” will have a stronger impact on inner-directed emotions (i.e. depression), while Wave I “negative relations with others” will have a stronger impact on outer-directed emotions (i.e. bad temper)	Partial Support: Physical victimization and school-strain were significant predictors of anger, but so were health and traditional strain. All five measures significantly predict depression, although health was the strongest
Hypothesis III: Females are more likely than males to respond to strain with inner-directed negative emotions	Overwhelming Support: There were no gender differences with regard to anger, but females were significantly more likely to experience depression
Hypothesis IV: Wave I strain will be a significant, positive predictor of Wave II deviance.	General Support: At least one strain measure was found to be significantly related to each measure of deviance.
Hypothesis V: Wave I Negative Emotions will have a significant, positive effect on Wave II deviance, and will render the strain/deviance relationship insignificant.	Marginal Support: There is some evidence that negative emotions are significant predictors of violence, but there is generally no support for the mediation hypothesis
Hypothesis VI: Wave II negative emotions will have a stronger effect on same-directed deviance than opposite-directed deviance.	Partial Support : Anger was found to be a significant predictor of violence, and depression was significantly related to suicide ideation. However, anger was also a significant predictor of alcohol use, and depression was negatively related to drug use
Hypothesis VII: Religiosity will exert direct and moderating effects on the relationship between strain, negative affect, and delinquency.	Marginal Support: Religiosity was found to only directly predict drug use. The only significant moderating effect (religiosity and physical victimization) was positively related to frequent alcohol use.
Hypothesis VIII: Religiosity will have a stronger direct and moderating effect for females than for males.	Partial Support: Religiosity inhibits <i>female</i> violent behavior. The religiosity measure was marginally significant when predicting drug use. There was a slight moderation effect for religiosity (religiosity*traditional strain) when predicting female violence.

aforementioned strain-induced negative affect are hypothesized to have (see Agnew, 2001; Jang and Johnson, 2003) on same-directed deviant behavior (see Hypothesis Six).

Results garnered only partial support for Hypothesis Two, as four of the five strain indicators were significant, positive predictors of parental reports of bad mood. While victimization and school-related strain were powerful, significant predictors of bad mood, so too were the measure of traditional strain and poor general health. This finding leads to the deduction that while, consistent with previous research in GST (Agnew, 2001; Jang and Johnson, 2003), negative relations with others have potent, same-directed effects on the types of negative affect most conducive to serious delinquency (i.e. violent behavior), stressful life events (that are generally not other-directed) also contribute to the prediction of parental-reports of bad temper. The fact that poor general health emerged as such a potent predictor of this proxy for anger was particularly confounding, given the fact that previous research in this area finds the same-directed effects, with regard to type of strain experienced (external versus internal) and resulting negative emotions, to be larger than opposite-directed ones (Agnew, 2002; Hay and Evans, 2003; Jang and Johnson, 2003). This suggests that externalized, other-directed strains are a consequential, but not a sufficient predictor of anger, and points to the need for further methodological specification in same-directed effects when examining strain and negative affective states. More specifically, perhaps a clearer articulation of what constitutes stressful life events and negative relations, and how these strains potentially affect deviant coping mechanisms, is in order.

Qualified support for same-directed effects (Hypothesis Two), with regard to strain and negative emotions, is established when observing the models predicting the

experience of depressive symptoms. An advantage to these results is given the method of analysis (OLS regression) the strength of each individual predictor relative to all other covariates can be estimated. Given this important qualification, poor general health was easily the most potent predictor of the experience of depressive symptoms and indicates that an inner-directed stressful life event (poor general health) has extraordinary power on a same-directed negative affective state. This finding not only offers powerful explanatory credence to the notion of same-directed effects with regard to strain and negative emotions, but also potentially illuminates the salience of Agnew's argument that indeed some forms of strain are of more consequence than others when predicting criminal behavior. This finding notwithstanding, it must be acknowledged that external sources of strain (i.e. physical victimization and school-related strain) also exerted significant effects on depression, but when pertaining to depression, it does appear that there is validity to the notion that specific forms of strain are related to specific emotional states, and thereby specific behavioral coping adaptations.

An important caveat of this research revolved around potential gender differences pertaining to the experience of strain-induced negative affect, a hypothesis extracted primarily from the pivotal work of Broidy and Agnew (1997), who first suggested that gender differences in strain-induced deviant coping mechanisms stem from differences in the emotional responses to strain. More specifically, numerous studies (see Broidy, 2001; Hay, 2003; Jang and Lyons, 2007; Kaufman, 2009) have found that while there are no salient differences between gender in the experience of strain-induced anger, females are more likely to experience strain-induced inner-directed negative emotions in conjunction with anger, which consequently serves to dilute the criminogenic effects of

anger (see Broidy, 2001; Broidy and Agnew, 1997). Based on this guiding logic, it was hypothesized that the disproportionate male involvement in violent behavior is largely a function of the experience of strain-induced negative affect. Results offered clear, confirmatory evidence for gender differences in the experience of strain-induced inner-directed negative emotions (i.e. deviance). As predicted, while there were no significant gender differences relating to the experience of parental reports of bad temper, females were disproportionately likely to experience depressive symptoms, a finding that offers substantial confirmatory evidence to the Broidy and Agnew (1997) hypothesis.

Hypothesis Three also predicted, in line with previous assessments of GST (Broidy, 2001; Broidy and Agnew, 1997; Jang and Johnson, 2003, 2005) that Wave I depressive symptoms would not be a significant predictor of Wave II violence. Results offer support to this supposition, with the measure of depression sharing a positive, but statistically insignificant, relationship with violent behavior. Taken in tandem, these results suggest that GST plays a pivotal role in accounting for gender differences in the mechanisms leading to violent behavior.

A unifying theme that permeates all estimations of GST involves the independent, albeit technically indirect, effects of strain on myriad forms of deviant/criminal behaviors. Results generally reveal support for the relation of all five strain sources to the four different deviant outcomes, although there are nuances to this relationship. For instance, three of the five strain indicators (physical victimization, poor general health, and school-related strains) exerted positive, significant effects on violent behavior. Likewise, victimization, school-related strain, and the attempted suicide by a close friend or family member were all found to be significant predictors of frequent alcohol use, with

peer/parent suicide ideation being the strongest predictor in the model. In relation to drug use, physical victimization exerted a particularly strong, positive effect, as did the measures for peer/parent suicide attempt and poor general health. Lastly, concerning suicide ideation, three of the five sources of strain (poor general health, school-related strain, and the suicide attempt of a close friend or family member) were found to share a significant, positive relationship with suicide ideation. Collectively, these results offer strong vindication for the independent, deviance-generating effects across the gamut of strain; ranging from physical victimization to the attempted suicide of a loved one. The preceding results point to the need for the identification of new, previously untapped, sources of strain that may be significant correlates of deviant behavior, as well as the negative emotions that have a more proximate impact on said behavior. However, despite the overwhelming support for Hypothesis Four, and the deviance-producing properties of strain, an important qualification is in order: the traditional measure of strain (disjunction between aspirations and expectations) failed to significantly affect any of the four measures of deviant coping strategies. Taking this finding into account, it appears that traditional conceptualizations of strain offer only marginal explanatory power to the prediction of negative emotions (relative to other sources of strain) and none to the prediction of deviant behavior. Incidentally, these findings lend considerable credence to Agnew's original call for the discarding of this operationalization of strain-it appears that the disjunction of aspirations and expectations has no place in contemporary criminological literature.

One of the more rudimentary assumptions of GST is the relationship between strain and deviance is indirect, and operates through the mediating variable of strain-

induced negative emotional states. Briefly, strain-induced negative emotions are said to produce a desire for corrective action on the part of an individual that experiences these emotions, and it is therefore these strain-generated emotional states that have the more immediate impact on deviant behavior. Based on this proposition, not only do these negative emotional states exert direct effects on deviant behavior, but the strain/deviance relationship should be rendered insignificant once said emotional states are taken into consideration. The previous statement was the exclusive focus of Hypothesis Five in the current research. Results offer qualified support to Hypothesis Five, as negative affective states were found to share positive relationships with the four measures of deviance. In particular, anger exerted a positive effect on violent behavior, frequent alcohol use, and drug use (in the reduced model), while depression had a significant impact on only drug use (in the opposite of the hypothesized direction) and suicide ideation. While these findings offer some confirmatory support for the effects of strain-induced negative affect on deviant coping mechanisms, it must be acknowledged that the direction of many of the coefficients was in the opposite of the hypothesized direction (a point that was discussed in greater detail when discussing Hypothesis Two). More importantly, and perhaps more damning to the central premise of GST, very little in the way of corroborating evidence was generated for the mediation effects of negative emotions on the strain/deviance relationship. In other words, for most of the outcome measures, at least some of the indicators of strain *maintained statistically significant effects*, even when controlling for both forms of negative affect. In particular, while bad temper shared a significant, positive relationship with Wave II violence, school-related strain and physical victimization retained a strong, statistically significant effect on violence. The

Meanwhile, three of the strain measures that were significant predictors of frequent alcohol use in the baseline model maintained their relationship even with the inclusion of negative affective states. Furthermore, depression and anger, while exerting significant effects on drug use in separate models, fail to render the relationship between three forms of strain (physical victimization, general health, and suicide attempt by a close friend or relative) and drug use insignificant. Lastly, two of the three strain measures that were significant predictors of suicide ideation in the baseline model remain significant in the models including bad temper and depressive symptoms.

The only evidence of a possible mediation effect (and support for the central focus of Hypothesis Five) was found when observing violent behavior, and suicide ideation. In particular, the general health measure-which is significant at the .05 level in the baseline model-fails to attain statistical significance after the inclusion of the negative affective items, a finding which partially suggests some mediation effects of negative emotions on the relationship between poor general health and violent behavior. Concerning suicide ideation, the inclusion of negative affective measures does reduce the effect of school-related strain (significant at the .05 level) insignificant. These findings overwhelmingly fail to offer supportive evidence of the mediating effects of strain-induced negative emotions, and therefore stand in strict contradiction to the prevailing logic inherent in GST. Further cementing this point is the finding that even when potential mediating effects were uncovered (for violence and suicide ideation), the coefficients for the strain items (general health, and school strain, respectively) barely reached acceptable levels (.05) of significance in the reduced models that did not contain the negative affective items. These findings suggest that strain exerts potent, direct

effects on deviant behaviors, *independent of the mediating variables of negative affect*. Perhaps certain forms of strain are experienced as being potent enough to independently affect deviant coping strategies and to bypass the proposed “proper channels” of negative emotions.

Hypothesis Six represents an extension of Hypothesis Five (the relationship between negative emotions and deviant coping behaviors), and specifically examines the “same-directed” hypothesis of Jang and Johnson (2003) with results from a nationally representative, longitudinal sample. It was hypothesized that same-directed effects between negative emotions and deviance would be larger than the opposite-direction effects. Briefly, individuals that experience strain-induced *inner-directed* negative emotions will be more likely to respond to said emotions with inner-directed behavioral coping strategies (i.e. drug use, alcohol use, suicide ideation) while those who experience *outer-directed* emotional responses to strain should appropriately respond with outer-directed behaviors (i.e. violence). Results offer qualified support for the same-directed hypothesis, with bad temper, but not depression, exerting a significant positive effect on violent behavior. Moreover, the same directed relationships between negative emotions and coping behaviors was observed for suicide ideation, as depressive symptoms, but not bad temper, was found to be a robust predictor of suicidal thoughts. Conversely, the same-directed hypothesis was not supported when observing frequent alcohol use. In particular, bad temper (an outer-directed emotional response to strain) was a significant predictor of frequent alcohol use (an inner-directed behavioral response), while the measure of depression was insignificant. Furthermore, anger, but not depression, was found to be a significant correlate of drug use in a reduced model, but

the opposite was true in the fully specified model (including all conditioning variables), although depression was *inversely* related to drug use. In summation, results offered mixed, equivocal support for the same-directed hypothesis; it appears that this relationship is upheld when observing suicidal thoughts and violent behavior, but does not work in the expected direction for different forms of substance use.

The final two hypotheses of the current research estimated the “conditioning” effects of religiosity on the relationship between strain, negative emotions, and deviant coping mechanisms; first on the full sample, then disaggregated by gender. This issue was the central focus of the current study, in an attempt to assess the Jang and Johnson thesis by employing the use of a nationally representative, longitudinal sample of adolescents. Specifically, it was posited that the religiosity would exert significant direct effects, as well as moderating effects on the aforementioned strain/emotions/deviance link. In other words, the link between strain and deviance would only operate at low levels of religiosity, as high levels of religiosity would essentially shield or buffer from the deviance-generating capacity of strain-induced negative emotional states. This research also offers an appraisal of an emerging area within GST scholarship (see Broidy and Agnew, 1997; Jang and Johnson, 2005; Kaufman, 2009): the potential “gendering” of the relationships between strain, negative emotions, conditioning variables (most importantly religiosity), and deviant behavioral outcomes.

This research offers only marginal support for the direct effects of religiosity on deviant coping mechanisms, a finding which contradicts the seminal Jang and Johnson (2003) research. In particular, the direct effects of religiosity were not only insignificant, but were essentially near zero (Incidence Rate/Odds Ratios near 1) for three of the four

deviant behavioral outcomes: violence, frequent alcohol use, and suicide ideation. In contrast to the preceding findings, there was some evidence that religiosity does have crime-inhibiting effects when concerning illicit drug use. The Odds Ratio for the religiosity measure was significant and negative, indicating that religious individuals are significantly less likely to use illicit drugs than are those that are less religious. This finding is in consonance with the anti-asceticism hypothesis, which suggests that religiosity only exerts a crime-inhibiting impact for those behaviors that violate moral (e.g. drug/alcohol use, gambling, etc.), as opposed to secular (i.e. violent and property crime) codes of conduct (see Burkett and White, 1974). It must be acknowledged that religiosity, generally speaking, is inconsequential when comes to directly preventing deviant/criminal behavior among a nationally representative sample. This finding suggests that the supportive findings of Jang and Johnson (2003, 2005) may be an artifact of a highly spiritual sample (African Americans).

The primary focus of the current study was to augment the foundational work of Jang and Johnson (2003) by explicitly assessing the moderating, or conditioning, effects of religiosity on the strain/negative emotions/deviance relationship. This was accomplished through a series of negative binomial and logistic regression models for each of the four measures of deviance, which included interaction terms for the five measures of strain and standardized religiosity. It was hypothesized that high levels of religiosity would buffer the deviance-inducing properties of strain. Although previous research (Johnson and Morris, 2008) offered a longitudinal examination of the Jang and Johnson thesis, the current study improved upon the design of the Johnson and Morris piece, by specifically including: (1) an enhanced measure of religiosity (including

important behavioral and non-behavioral components); (2) a wider array of deviant behavior (assessing the anti-asceticism hypothesis while simultaneously offering a test of the “generality” of GST); (3) a proxy for anger (i.e. bad temper); which is crucial to any examination of GST (Agnew, 1992; Paternoster and Mazerolle, 1994). It must be acknowledged that the current study offers only a partial replication of these seminal studies due to the fact that I do not include interaction terms for the other theoretically-relevant, conditioning variables (social support, self-control, differential association, social control) and strain. Therefore, the current study only offered an estimation of the conditioning effects of one potential moderating factor: religiosity.

Results generally lend marginal support to this contention, and largely reinforce the findings of Johnson and Morris (2008). There were no moderating effects found for religiosity when observing violent behavior, as the five interaction terms (strain*standardized religiosity) failed to attain statistical significance, and were very close to 1. This leads to the supposition that religiosity has no relevant direct effect on violent behavior, nor does it moderate the effects of strain on violence; a finding that contradicts that work of Jang and Johnson (2003). Likewise, interaction terms between religiosity and the five measures of strain were found to have no significant effect on either frequent alcohol use, or illicit drug use. The one truly perplexing finding in this research was that religiosity, which has no direct effects, interacts with physical victimization to have a *positive* effect on the frequent use of alcohol, suggesting that physical victimization increases the frequent alcohol use for those with *high* levels of research. Despite these significant results, it must be acknowledged that this finding still runs counter to the Jang and Johnson hypothesis, and offers further substantiation to the

supposition that religiosity fails to buffer the deviance-inducing effects of strain among a nationally-representative sample. The results for the full sample offer absolutely no evidence of a potential moderating effect of religiosity on the strain/negative emotions/deviance relationship. These findings, similar to those garnered by Johnson and Morris (2008), suggest that religiosity has only marginal direct effects in inhibiting deviant behavior, and perhaps more importantly religiosity does not condition the strain/deviance relationship among a nationally representative sample of adolescents. It must be acknowledged that I only included, similar to Johnson and Morris (2008), potential interactions between religiosity and strain, and not interactions between strain-induced negative affect and religiosity. This omission is of relevance due to the fact that the Jang and Johnson (2003) piece found significant moderating effects of religiosity on the relationship between strain-induced negative emotions and deviant behavior.

The final hypothesis in this research represents an extension of the previous hypothesis in that I test for potential gender effects in the relationship between strain, negative affect, conditioning variables and deviant behavior. It was posited that there would exist the potential gendering of this relationship, with the trajectories leading from strain to deviance differing significantly by gender. In particular, Hypothesis Eight predicts that religiosity, in congruence with the GST literature (see Jang and Johnson, 2005), will have stronger direct and moderating effects on deviant behavior for *females*. Concerning the direct effects of religiosity on deviant behavior, there was evidence offering qualified support for Hypothesis Eight. In particular, religiosity exerts a significant, direct, negative effect on violent behavior for females but not for males. Moreover, religiosity was found to be a marginally significant (at the .08 level of

statistical significance) predictor of illicit drug use for females. These findings are largely in concert with previous research in this area (see Jang and Johnson, 2005). Conversely, religiosity was found to have null effects on male and female frequent alcohol use, as well as suicide ideation, a finding consistent with the Johnson and Morris (2008) research.

As related to the potential gendering of the conditioning effects of religiosity, results offered only minimal support. In particular, the interaction term for traditional strain and religiosity was significant and negatively related to female violent behavior, suggesting that religiosity does partially moderate the effects of traditional strain on violence for females. This findings lends support to the notion that religiosity offers some protective mechanisms for females, shielding them from the violence-generating properties of the disjunction between educational aspirations and expectations. Despite these promising findings, there appears to be no gender differences in the moderating effects of religiosity on the relationship between strain and any of the other measures of deviant behavior. All interaction terms were either insignificant across gender, or were in the opposite of the hypothesized direction (the interaction term between physical victimization and religiosity was *positive* for male frequent alcohol use), a finding that fails to offer evidence of religiosity to serve as a prominent external conditioning effect.

In summation, this research generally offers support for the central tenets of General Strain Theory, although there were some important qualifications. First, in line with expectations and consistent with previous examinations of GST (Agnew, 1992; Agnew and White, 1992; Brezina, 1996; Paternoster and Mazerolle, 1994; Mazerolle and Piquero, 1998) the five measures of strain employed in this research were found to be

consequential correlates of negative affective states. Additionally, the vast majority of strain measures (with the notable exception of traditional strain) were also found to share a significant, direct, relationship with four separate measures of deviant behavior.

Suffice it to say, these central tenets of GST easily received the most empirical support in this study. The results largely offered equivocal support for the same-direction argument (Jang and Johnson, 2003), with the argument being upheld only for extreme inner and outer-directed deviance. In particular, outer-directed negative emotions appear to have stronger effects on extreme cases (i.e. violent behavior) of outer-directed deviance, while the experience of depressive symptoms is of paramount importance when canvassing the correlates of what is perhaps the most extreme example (suicide) of inner-directed deviant coping mechanisms: suicide. Moving into the gendered component of this research, results lent a degree of credence to the Broidy and Agnew (1997) postulation; females were found to be significantly more likely to respond to strain with depression (an inner-directed negative emotion), and depression was subsequently found to have stronger predictive power when modeling “inner-directed” deviant coping mechanisms (e.g. suicide ideation). Additionally, it appears that for females, the direct effects of religiosity may serve to decrease the likelihood of deviant behavior, a finding that reinforces previous empirical studies in this area (Broidy, 2001; Jang and Johnson 2003, 2005; Kaufman, 2009; Sharp et al. 2005). The preceding results suggest a modest, or in some cases overwhelming, support for the fundamental propositions outlined in GST.

As previously mentioned, not all of the propositions of GST were supported by this research. Most notably, there was essentially no support for the contention that negative affective states mediate the relationship between strain and deviant coping

mechanisms; pointing to the independent, deviance-generating properties of strain. While this finding is not without empirical precedence, (see Hutchinson-Wallace et al. 2005) it stands in strict contradiction to the prevailing logic of GST, which essentially posits that the effects of strain on deviance are primarily *indirect*. Furthermore, in strict contradiction to the Jang and Johnson series, the hypotheses assessing the direct and moderating effects of religiosity received only a modicum of empirical validation. Results extracted from this longitudinal, nationally representative sample of adolescents suggests that religiosity only exerts direct, preventative mechanisms, when observing illicit drug use. Religiosity failed to exert consequential, direct effects on any other form of deviant behavior. Furthermore, these results decisively offer disconfirming evidence in relation to the moderating or conditioning capacity of religiosity on the GST/deviance relationship, as notably documented by Jang and Johnson (2003, 2005). It appears that religiosity does not consistently interact with any measure of strain across a spectrum of deviant coping mechanisms. Further evidence refuting the Jang and Johnson “moderating” argument was found when analyses were disaggregated by gender. With one exception (traditional strain*religiosity), the moderating effects of religiosity did not operate differently across gender. Taken collectively, the results of this research principally offer qualified support for GST in the processes leading from the experience of strain to deviant coping methods.

Limitations of Study

There were a host of methodological/conceptual shortcomings to this study that must be documented before discussing the contributions made by this research to the extant GST literature.

Data

Many of the limitations in this study emanate from issues pertaining to the structure of the Add Health; both in terms of the measures employed in the current research, as well as the sample. Regarding the sample selection, while the Add Health represents a panel design that has managed to follow the initial sample well into adulthood, the first data utilized in this study comes from the first two waves, in which the overwhelming majority of participants were still in high school. Consequently, there are a host of methodological problems stemming from the use of a high school sample, the most notable one being representativeness (see Sykes and Cullen, 1992).

Measures

There were a number of potential methodological shortcomings in this study that warrant further elaboration. First, the current study-while including a number of strains that have previously been found to be consequential predictors of negative emotional states and subsequent criminality (Agnew 2001, 2002; Agnew et al. 2002; Hay and Evans, 2003; Hutchinson-Wallace et al. 2005; Johnson and Morris, 2008; Kaufman, 2009; Sharp et al. 2005; Slocum et al. 2005)-by no means offers an exhaustive list of potential strains, and omitted a number of strains that have been found to be

consequential when estimating criminal/delinquent behavior, including: economic deprivation (Baron, 2004, 2007), parental hostility (Aseltine et al. 2000; Mazerolle et al. 2000; Moon et al. 2009; Sharp et al. 2005; Slocum et al. 2005), racial/gender discrimination (Eitle, 2002; Eitle and Turner, 2003; Jang, 2007; Moon et al. 2009), parental divorce/separation (Agnew, 1992, 2001), romantic disillusionment (Agnew and Brezina, 1997; Gallupe and Baron, 2009), the death of a loved one (Jang and Johnson, 2003), pregnancy (Aseltine et al. 2000; Eitle and Turner, 2003), neighborhood strain (Agnew, 2002; Paternoster and Mazerolle, 1994), moving to a new neighborhood (Capowich et al. 2001; Jang and Johnson, 2003), and anticipatory strains (Agnew, 2002). These popular conceptualizations of strain were not utilized in the current research either due to data limitations (measures not available in the Add Health), unreliability of the measures (unacceptable reliability coefficients), or they were deemed by the author (based on a cursory review of the extant literature) to be less consequential sources of strain. In particular, it would have been beneficial had the data contained measures tapping into racial/gender discrimination, given the empirical attention that this new source of strain has recently received (Eitle, 2002; Eitle and Turner, 2003; Jang, 2007; Moon et al. 2009). The preceding justifications notwithstanding, it is fully acknowledged by the author that the utilization of different measures of strain could have conceivably impacted the results garnered by the study, and therefore represents a limitation to the current analysis.

Furthermore, the structure of the Add Health does not lend itself to a rigorous operationalization of strain due to the fact that it does not contain *subjective* measures of strain. The potential liability with using objective measures of strain is that there is a

degree of inference on the part of the researcher that such items have strain-inducing properties, without seeking validation of this inference from the individuals themselves (Slocum et al. 2005). Agnew (2001), along with others operating within the GST paradigm (see Baron, 2004), successfully impresses upon the academic community the potential dangers of taking such liberties when conceptualizing strain. Based on this specification, a number of recent empirical assessments of GST have employed the use of subjective measures (i.e. asking the individuals how much the experience of the strain “bothered” them) of strain (see Jang, 2007; Jang and Johnson 2003, 2005; Sharp et al. 2005; Slocum et al. 2005 for examples of “subjective” measures of strain), and thus the conceptualization strategy adopted by this research incidentally represents one of its foremost shortcomings. Despite the preceding concerns, the most of the strain measures, with the exception of the traditional measure of strain, were found to be independently related to varied deviant outcomes, and thus allows for a degree of validation to the use of this operationalization strategy (see Brezina 1996; Johnson and Morris, 2008; Kaufman, 2009; Paternoster and Mazerolle, 1994) for similar conceptualizations of strain).

On a similar note, while the current study included two measures of negative affective states (depression and parental reports of bad temper) that are presumed to serve as emotional reactions to strain, there were a series of logistical problems with these measures. First, as acknowledged at the outset of this study, the Add Health data does not contain a measure that taps into individual perceptions of anger, therefore, in lieu of an individual indicator of anger, I employed the use of a serviceable proxy: parental-indicated bad temper. Given the prominent role assumed by anger within the GST

framework (Agnew, 1992, 2001; Paternoster and Mazzerolle, 1994; Mazzerolle and Piquero, 1998), this measure of anger admittedly poses a potential problem when offering a comprehensive examination of GST. While remaining cognizant of the inherent liability in this measure, an empirical precedent was established for using this operationalization (Kaufman, 2009), and is somewhat validated by the empirical literature (see Moffitt et al. 2001; Piquero et al. 2000).

An additional liability with the measure of anger used in this study is that it represents a trait-based, as opposed to a situational, measure of bad temper. As addressed in previous chapters, recent scholarship within GST (Moon et al. 2009) has proffered the utility of situational-measures of anger vis-à-vis traditional measures, due to the fact that situational measures are more likely to capture the immediate negative emotions induced by strain. In other words, as most strain measures are reflective of “situational” (i.e. an event or situation that has been experienced within a certain time frame), a situational measure of the resulting negative emotions would be ideal. While it is acknowledged that a situational measure of bad temper would have been optimal, previous research (Mazerolle and Piquero, 1998) has substantiated the use of more trait-based measures of anger or bad temper, in lieu of the preferred situational measure. It has previously been argued that the individual that experienced elevated levels of trait-based anger would duly respond to stressful *situations* with elevated levels of anger.

In a related manner, the measure of depression utilized in the current research also represents a trait-based measure of the construct, despite the fact that the question attempted to gauge the experience of depressive symptoms in the week preceding the interview. In a recent extension to GST, Moon et al. (2009) attempted to delineate the

mediating effects of negative emotions (both anger and depression) by decomposing the effects of depression. Specifically, it was discovered that *situational measures* of depression mediated the link between several different types of strain and delinquency for a sample of Korean youth, while no mediating effects were found for the trait-based measure of depression. This finding is of particular relevance to the current study due to the fact that the general lack of mediating effects for either measure of negative affect on the strain/deviance relationship could potentially be attributable to the *type* of negative affect under consideration. In other words, had a more proximate measure of the emotional reactions to strain been available in the Add Health data, perhaps the mediation argument-one that is fundamental to the inherent logic of GST-would have been supported. Despite this potentially damning limitation to the Add Health data, it must be acknowledged that the measure of depression used in this study (largely extracted from the CES-D scale) is a standard measure in the field of stress (Brown, 2006; Radloff, 1977) and has been previously utilized in empirical examinations of GST (Johnson and Morris, 2008; Kaufman, 2009).

The present estimation of GST-while incorporating two of the more commonly-utilized forms of negative affect (bad temper and depression) by no means exhausted the list of negative emotions that have been adopted in the GST literature (Agnew, 1992). Specifically, Agnew postulated that, aside from anger and depression, the strained individual may experience a sense of anxiety, fear, resentment, or nervousness. The omission of these forms of negative affect is primarily a byproduct of the dearth of measures tapping into these constructs. Furthermore, the 19-item depression scale used in this research (extracted from the 20-item CESD scale) contained potential indicators of

fear, anxiety, and nervousness (see Appendix for further clarification). Therefore, many of these presumably omitted constructs were represented in the 19-item scale of depression, and were effectively included when modeling potential correlates of deviant coping mechanisms.

In relation to potential conditioning effects on the relationship between strain, negative emotions, and deviance, this study-while including a host of such conditioning variables-omitted measures (e.g. self-control, self-efficacy) that previous research has found to have significant moderating effects (Paternoster and Mazerolle, 1994; Agnew et al. 2002). While it should be noted that the Add Health data does contain items that ostensibly tap into each of these constructs, the items were found to have low reliability and were subsequently excluded from all analyses.

The primary purpose of this study was to offer a longitudinal assessment of the Jang and Johnson thesis-that religiosity moderates the relationship between strain, negative emotions and delinquency. Furthermore, this project attempted to delineate the potential gendering of the relationship among the central variables in this study, in general, and gender differences in relation to the potential conditioning effects of religiosity in particular. While it is the author's contention that the results of this study offer evidence that indicates that religiosity fails to moderate the relationship between strain-induced negative affect and deviant coping mechanisms, there were a number of potential shortcomings to my operationalization of religiosity. The most glaring weakness of the religiosity measure employed by this study revolves around the lack of a denominational measure. Research consistently indicates (see Burdette, Ellison, Sherkat, and Gore, 2007) that there is considerable variation across denominations in their

adherence to religious prescriptions and proscriptions regarding a litany of deviant behaviors (e.g. alcohol use, drug use, premarital sex), and it is therefore highly plausible that the conditioning effects of religiosity are potentially a result of denominational affiliation. It could be logically argued that the moderating effects of religiosity are more likely to be in effect among a religious denomination that is known to embrace more fundamental principles (i.e. Evangelical Protestants). While adopting a general classification scheme may initially appear to be relatively straightforward, there is considerable empirical debate as to the correct classification of individual denominations (see Blanchard, Bartkowski, Matthews, and Kerley, 2008; Burdette, Ellison, Sherkat, and Gore, 2007; Streenland et al. 2000) into broader ecological categories based on some real or imagined dimension (conservatism). The resulting ambiguity from this debate in the empirical religious literature makes classification a daunting task, and based on this lack of consensus within the scientific community (coupled with the rather convoluted coding scheme of religious denomination within the Add Health) a measure of religious denomination was not included in the current study. Taking this limitation into account, this conceptualization of religiosity transcends the only existing, representative test of the Jang/Johnson thesis (Johnson and Morris, 2008) and uses a common operationalization of religiosity (Evans et al. 1995, 1996; Jang, 2007; Jang and Johnson, 2003, 2005; Jang and Lyons, 2006). Despite the preceding profession of confidence in my conceptualization of religiosity, it must be acknowledged that an indicator of denominational affiliation would have enhanced the current study.

Analytic Strategy

One of the central methodological issues to consider when assessing the generality of General Strain Theory is the use of cross-sectional versus longitudinal data. While longitudinal data has the obvious advantage of being able to assess causality between variables, the issue is somewhat problematic when relating to GST. Specifically, Agnew has made numerous arguments (1992, 2001) advocating the use of cross-sectional data when estimating the GST/crime relationship, primarily due to the fact that the effects of strain on negative emotions and deviant behavior are generally expected to be short-lived and contemporaneous. For instance, Agnew astutely conjectures that the experience of a stressful life event is generally not of consequence when determining behavior that happens years into the future. Despite this potential liability, I contend that the short time waves between Waves I and II of the Add Health allow for the “contemporaneous” nature of strain to be assessed. Moreover, in order to reduce the possibility of reciprocal effects between independent and dependent variables, longitudinal data is more appropriate. Lastly, a number of studies operating within the GST paradigm have employed the use of longitudinal data (Agnew, 2002; Aseltine et al. 2000; Brezina, 1996; Hoffman and Miller, 1998; Kaufman, 2009; Paternoster and Mazerolle, 1994; Robbers, 2004).

Admittedly, a more pressing concern with the present research specifically revolves around the method employed when testing for the moderating effects of religiosity. In particular, I followed the lead of the previous longitudinal estimation of the moderating effects of religiosity by creating interaction terms for the five strain measures and the standardized religiosity index across the four different deviant coping

strategies (Johnson and Morris, 2008). While the results did lend some marginal support to the moderation argument, as religiosity was able to effectively shield victimized females from violent coping mechanisms, it possibly could have been more efficacious, as discovered in the Jang and Johnson study (2003) to test for moderating effects between negative affective states and religiosity. In the landmark study by Jang and Johnson (2003), the researchers found significant conditioning effects for religiosity primarily when employing an interaction term for religiosity and negative effect in the prediction of deviant behavior. This caveat indicates that the chief protective mechanisms offered by religiosity to strained individuals specifically lies in the conditioning effects religiosity exerts on strain-induced negative affect. In particular, it appears that individuals experiencing strain-generated negative emotional states are buffered from adopting deviant coping strategies when they possess elevated levels of religiosity. This represents a significant limitation when attempting to assess the contributions of this study to the moderation/conditioning effects argument in particular and the GST literature in general.

Lastly, this research offered an analysis of the moderating effects of religiosity, while essentially neglecting potential moderating effects exhibited by other “conditioning” variables; such as social control, social support, differential association, and self-esteem. Previous research in the GST tradition has consistently found evidence that indicates the aforementioned variables offer significant moderating effects on the relationship between strain, negative emotions, and crime (Agnew and White, 1992; Agnew et al. 2002; Baron, 2006; Hay and Evans, 2006; Paternoster and Mazerolle, 1994; Piquero and Sealock, 2004), and this represents a considerable limitation of the current study.

It is highly plausible that this study may have benefited from a composite measure of strain when analyzing the primary hypotheses (moderation/mediation effects) of this research. Previous research has defended the use of composite measures of strain (Agnew et al. 2002; Agnew and White, 1992; Jang and Johnson 2003, 2005; Jang and Lyons, 2006; Mazerolle et al. 2000; Paternoster and Mazerolle, 1994; Slocum et al. 2005) on the grounds that the accumulation of a host of strains has the most relevant effects on negative emotional states and subsequent criminal behavior. This measure of strain has the advantage of indexing the crime-generating effects of the overall level of strain that is experienced by the individual. The fact that this analysis does not contain such a measure of strain prevents an assessment of the overall effects of strain on deviance, and potentially obscures important relationships among strain, negative emotions and delinquent behavior. Despite this potential limitation, there is some merit for this methodological specification as previous research has demonstrated that all strains are not equal in their relation to deviant behavior (Agnew, 2001, 2002; Jang and Johnson, 2003). Quite frankly, some forms of strain are more criminogenic than others, and aggregating this pivotal construct into one composite measure could theoretically conceal or mask the specific effects of certain strains on certain deviant behaviors.

The preceding paragraphs by no means exhausts the list of potential shortcomings in the current research, but offers a synopsis of the most glaring issues that ostensibly compromise the contributions made by this research. The contributions made by the this study to the extant GST literature are outlined below, along with a brief discussion on potential directions for future research in this area.

Contributions of Current Study

The current study offers a host of substantial contributions to the GST literature in general, and the Jang/Johnson thesis in particular. This research significantly advanced theorizing in this area by offering longitudinal assessments that served to reinforce the explanatory power of certain forms of strain (i.e. physical victimization) in canvassing deviant coping behaviors, as well as augmenting the only existing study (Johnson and Morris, 2008) that offers a longitudinal examination of the watershed Jang/Johnson (2003, 2005) studies.

This research offers conclusive support for recent empirical assessments of GST (most notably the work began by Agnew, 2001) that attempted to identify the types of strain most commonly linked to criminal behavior. The findings of the current study are in congruence with previous GST examinations (Agnew, 2001, 2002; Agnew et al. 2002; Hutchinson-Wallace et al. 2005; Kaufman, 2009) in identifying physical victimization as one of the more consequential, criminogenic sources of strain. Furthermore, the findings garnered by this research corroborate existing research (Kaufman, 2009) in illuminating that certain forms of strain (physical victimization and school-related strains) are potent enough to effectively bypass the traditional trajectories that lead from strain to deviant coping strategies by independently predicting deviant behavior. In particular, it appears that physical victimization is a particularly powerful correlate of deviance that has both direct and indirect (through the mediating effects of negative emotional states) effects (see Slocum et al. 2005 for corroborating evidence). Additionally, a major contribution of this analysis to the GST literature is the positioning of poor general health as a robust direct and indirect predictor of male and, in particular, female deviance. While previous

analysis of GST (Eitle, 2002; Jang and Johnson, 2003, 2005) have incorporated a measure of poor general health, the studies have primarily focused on serious or acute strains, and not the ostensibly innocuous experience of daily health. A major contribution offered by the current research is that poor general health was easily found to be the most robust correlate of depressive symptoms, and was additionally found to be a direct predictor of both illicit drug use and suicide ideation. This research will hopefully lay the foundation for further examinations of health within GST, employing more detailed conceptualizations of health in order to properly delineate the connection between health, negative emotions, and deviant behavioral outcomes.

Most of the contributions of this research pertain to the augmentation of existing research that assesses the potential moderating effects of religiosity on the strain/negative emotions/deviance relationship. It is the author's contention that the current set of analyses extended the Jang and Johnson study in meaningful ways by improving upon the one existing assessment of their original research question. Specifically, the current research offered a longitudinal assessment of the potential conditioning effects of religiosity in the strain/deviance relationship among a nationally representative sample of adolescents. Moreover, the current study transcends the Johnson and Morris (2008) assessment in a number of areas, most notably in relation to the conceptualization of key variables. In particular, the current research represents an improvement over the Johnson and Morris (2008) study by incorporated a more comprehensive conceptualization of strain, which included not only measures of school-related strain and victimization, but also indicators of poor health, traditional strain, and the potential loss of positively valued stimuli (i.e. the attempted suicide by a family member or close friend). This strategy

enhances the ability to test for the general effects of GST, and represents a meaningful improvement over previous research in this area. Likewise, the current assessment of GST not only included a proxy for anger (omitted in the Johnson and Morris analysis), but also offered an explicit test of the mediating effects of negative emotional states on the strain and deviance relationship; consequently finding limited evidence in support of the mediating effects of strain-induced negative emotions. In particular, the current research employed the use of a more multidimensional measure of religiosity- incorporating dimensions that tap into fundamentalist belief systems. Lastly, this research included a much broader conceptualization of deviance, and by so doing found substantiating evidence for the anti-asceticism hypothesis, as religiosity was found to be a significant, independent inhibitor of drug use for both males and females. Based on the preceding evidence, it can logically be inferred that the current analysis offers a more comprehensive assessment of the capacity of religiosity to serve as a conditioning effect to the strain/negative emotions/deviance relationship among a nationally representative, longitudinal sample of adolescents, and therefore offers a salient contribution to the extant GST literature.

Directions for Future Research

The last section of this expansive project offers a brief discussion of future avenues of research within General Strain Theory. First, it would be beneficial if future longitudinal assessments of the moderating effects of religiosity would focus more on the interaction between religiosity and negative affective states. Specifically, Jang and Johnson (2003) uncovered the most support for the conditioning effects of religiosity

when observing the moderating effects of religiosity on the potential criminogenic consequences of strain-induced negative affect. The current study found no conclusive support for the moderating effects of religiosity when concerning the effects of strain on deviance, but a more stringent test of the Jang/Johnson thesis would have estimated the effects of the interaction between strain-induced negative affective states (anger and depression) and religiosity. This would specifically assess the ability of religiosity to buffer the effects of strain-induced negative affect on a series of potential deviant coping mechanisms.

A second suggestion for future research is to provide a more comprehensive assessment of potential moderating or conditioning effects (i.e. social support, social control, differential association, self-esteem). A considerable limitation of the current study is that I exclusively focused on the moderating effects of religiosity, and it would be advisable to include interaction terms between all possible combinations of strain, negative affective states, and conditioning effects for purposes of delineating the most meaningful conditioning effects. As previously alluded to, the GST literature finds consistent, supportive evidence for the moderating effects of social control (Agnew et al. 2002), differential association (Agnew and White, 1992), self-efficacy (Agnew and White, 1992), self-esteem (Jang, 2007), self-control (Agnew et al. 2002; Hay and Evans, 2006) and social support (Capowich et al. 2001; Jang and Lyons, 2007; Robers, 2004).

Thirdly future research within this area would benefit by offering a more comprehensive measure of strains, as it is plausible that the inclusion of different forms of stressors (e.g. neighborhood strains, family disruption, death of a loved, romantic breakup, racial/gender discrimination) would have been sufficed in flushing out any

potential moderating effects of religiosity. A final direction of research in this general area is to test the Jang and Johnson argument within the parameters of Macro-Level Strain Theory (Agnew, 1999). MST is almost entirely derivative of GST in that the terminology is essentially identical, with one important qualification: all measures (strain, negative affect, conditioning variables, and crime/deviance) are measured at the macro or aggregate level, as opposed to the individual-level indicators that are primarily used in empirical examinations of GST. For instance, Warner & Fowler, 2003; Wareham et al. 2005 have introduced social capital and informal measures of social control to serve as macro-level conditioning variables on the relationship between aggregate strain (e.g. social disorganization), aggregate indicators of negative affect, and aggregate measures of crime/deviance. A glaring omission in this area of research is the use of aggregate levels of religiosity to serve as a potential conditioning effect that moderates the strain/negative emotions/crime relationship.

In summation, the relationship between strain, negative affective states, conditioning effects (internal and external), and deviance is well established within the GST literature. Religiosity has recently been introduced as a competing external conditioning effect that serves the protective function of shielding strained individuals from the crime-inducing properties of negative affect (Jang and Johnson, 2003, 2005; Johnson and Morris, 2008). The current research offers the most comprehensive examination to date of this hypothesis, employing the use of a nationally representative sample of adolescents. While, generally speaking, results fail to corroborate many of the central premises of the groundbreaking work of Jang and Johnson, future research,

incorporating more comprehensive measures of key variables may offer more conclusive evidence in the role played by individual religiosity within General Strain Theory.

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APPENDIX A
SELECTED SCALE ITEMS
FOR INDEPENDENT
VARIABLES

APPENDIX A

SELECTED SCALE ITEMS FOR INDEPENDENT VARIABLES

Traditional Strain (response categories range from 1 = “low”, and 5 = “high”)

1. How much do you want to go to college?
2. How likely is it that you will go to college?

Stressful Life Events:

Health-Related Strains: How often in the past 12 months have you experienced the following conditions (0= never, 4 = every day)

1. Have you had a headache
2. Felt hot all over for no apparent reason
3. A stomach ache or an upset stomach
4. Cold sweats
5. Feeling physically weak for no apparent reason
6. A sore throat or a cough
7. Feeling very tired for no reason
8. Painful or very frequent urination
9. Feeling really sick
10. Waking up feeling tired
11. Skin problems, such as itching or pimples
12. Dizziness
13. Chest pains
14. Aches, pains, or soreness in your muscles or joints
15. Poor appetite
16. Trouble falling asleep or staying asleep
17. Trouble relaxing
18. Moodiness
19. In General how is your health? Would you say.....(1 = Excellent, 5 = Poor)

Loss of Positively Valued Stimuli: Suicide Attempt on Part of Close Friend/Family Member (0 = No, 1 = Yes)

1. Have any of your friends tried to kill themselves in the previous twelve months?
 - a. Have any of them succeeded?
2. Have any of your family tried to kill themselves in the previous twelve months?
 - a. Have any of them succeeded?

Negative Relations with Others

School-Related Strain

1. In the previous school year, how often did you have trouble getting along with your teachers (0 = Never, 4 = Every Day)?
2. In the previous school year, how often did you have trouble getting along with other students (0 = Never, 4 = Every Day)?
3. The teachers at your school treat students fairly (1 = Strongly Agree, 5 = Strongly Disagree).
4. You feel safe in your school (1= Strongly Agree, 5 = Strongly Disagree).

Physical Victimization

In the year preceding the Wave I interview, how often did the following events occur (0 = Never, 2 = More than once)

1. Someone pulled a gun or knife on you.
2. Someone stabbed you.
3. Someone shot you.
4. You were jumped.

APPENDIX B
MEDIATING VARIABLES
SURVEY SCALES
AND ITEMS

APPENDIX B:

MEDIATING VARIABLES SURVEY SCALES AND ITEMS

Anger (from the parental interview)

1. Does your child have a bad temper (0 = No, 1 = Yes)?

Depression

How often was each of the following things true in the week preceding the Wave I interview (0 = Never, 3 = Most of the time or all of the time)?

1. You were bothered by things that usually don't bother you.
2. You didn't feel like eating, your appetite was poor
3. You felt like you couldn't shake off the blues, even with help from your family and your friends
4. You felt that you were just as good as other people.
5. You had trouble keeping your mind on what you were doing.
6. You felt depressed.
7. You felt that you were too tired to do things
8. You felt hopeful about the future.
9. You thought your life had been a failure.
10. You felt fearful
11. You were happy.
12. You talked less than usual
13. You felt lonely.
14. People were unfriendly to you.
15. You enjoyed life.
16. You felt sad.
17. You felt that people disliked you.
18. It was hard to get started doing things.
19. You felt life was not worth living.

APPENDIX C
CONDITIONING EFFECTS

APPENDIX C:
CONDITIONING EFFECTS

Self-Esteem

Indicate the degree to which you agree with the following items (1 = Strongly Agree, 5 = Strongly Disagree)

1. You have a lot of good qualities
2. You have a lot to be proud of.
3. You like yourself just the way you are.
4. You feel like you are doing everything just about right.

Social Support

(Response categories range from 1 “not at all” to 5 “very much”)

1. How much do you feel adults care about you?
2. How much do you feel that your teachers care about you?
3. How much do you feel that your parents care about you?
4. How much do you feel that your friends care about you?
5. How much do you feel that people in your family understand you?
6. How much do you think your mother cares about you?
7. How much do you think your dad cares about you?

Social Control:

School Attachment: (1 = Strongly Agree, 5 = Strongly Disagree)

1. You feel close to people at your school.
2. You feel like you are part of your school.
3. You are happy to be at your school.

School Commitment (Scores range from 1 “A” to 4 “D or lower”)

1. What was your grade in English or language arts?
2. what was your grade in math?
3. what was your grade in history or social studies?
4. what was your grade in science?

Parental Attachment:

Do you agree or disagree with the following items (1 = Strongly Agree, 5 = Strongly Disagree)

1. Most of the time, your mother is warm and loving toward you.
2. Your mother encourages you to be independent.

3. When you do something wrong that is important, your mother talks about it with you and helps you understand why it is wrong.
4. You are satisfied with the way your mother and you communicate with each other.
5. Overall, you are satisfied with your relationship with your mother.
6. Most of the time, your father is warm and loving toward you.
7. You are satisfied with the way your father and you communicate with each other.
8. Overall, you are satisfied with your relationship with your father.
9. On how many of the past seven days was at least one of your parents in the room with you while you ate your evening meal (0 = 0 days, 7 = 7 days).

Parental Involvement

Which of the following things have you done in the past four weeks with your mother (0 = no, 1 = yes)?

1. Went shopping
2. Played a sport
3. Went to a religious service or church-related event
4. Went to a movie, play, museum, concert, or sports event
5. Worked on a project for school

Which of the following things have you done in the past four weeks with your father (0 = no, 1 = yes)

1. Went shopping
2. Played a sport
3. Went to a religious service or church-related event
4. Went to a movie, play, museum, concert, or sports event
5. Worked on a project for school

Deviant Peers

Of your three closest friends, how many of them have:

1. Smoked at least one cigarette per day.
 2. Drink alcohol at least once a month
- Smoke marijuana at least once a month

Religiosity

Organizational Religious Participation (1= once a week or more, 5 = never)

1. Indicate the extent to which you attend church services
2. Indicate the extent to which you take part in church activities (i.e. choir, youth groups, bible study).

Non-Organizational Religious Participation (1 = at least once a day, 5 = never)

1. During the past month, how frequently did you pray?

Religious Salience (1 = very important, 4 = not important at all)

1. How important is religion to you?

Fundamentalist Beliefs (1 = agree, 3 = religion doesn't have sacred scriptures)

1. Do you agree or disagree that the sacred scriptures of your religion are the word of God and are completely without any mistakes?

APPENDIX D
DEPENDENT VARIABLES

APPENDIX D:

DEPENDENT VARIABLES

Violent Delinquency/Aggression Scale

Violent Delinquency

In the past 12 months, how many times have you engaged in the following behaviors: (0= “Never” to 3= “Five or More Times”)

1. Use or threaten to use a weapon to get something from someone.
2. Taken part in a fight where a group of your friends was against another group.
3. Gotten into a serious physical fight.
4. Use a weapon in a fight.
5. Hurt someone badly enough to require bandages or care from a doctor or nurse

During the past 12 months, how often did each of the following things happen (0= “never” to 2 = “more than once”)?

1. pulled a knife or gun on someone.
2. shot or stabbed someone.

Drug Offenses

Drug Use

In the past 30 days, how many times have you used...(response set ranges from 0 to 900)

1. marijuana
2. cocaine
3. inhalants
4. other drugs

Status Offenses

Frequent Alcohol Use (1 = every day or almost every day, 7 = never)

1. During the past 12 months, on how many days did you drink alcohol

Binge Drinking

1. Over the past 12 months, on how many days did you drink five or more drinks in a row (1 = every day or almost every day, 7 = never)

Analogous Items

Suicide Ideation

1. In the past 12 months, did you ever seriously think about committing suicide?
(0=no, 1= yes)