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GENERAL STRAIN THEORY, PERSISTENCE, AND DESISTANCE AMONG YOUNG ADULT MALES

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Abstract

Purpose—Despite the surge in scholarly activity investigating the criminal career, relatively less attention has been devoted to the issue of criminal desistance versus persistence (until recently). The present study contributed to our understanding of this process by exploring the suitability of General Strain Theory (GST) for predicting changes in criminal activity across time.

Methods—Data from a longitudinal study of males in South Florida are examined using robust regression analyses.

Results—The core GST relationship, that changes in strain should predict changes in criminal activity, was supported, even after controlling for important adult social roles such as marriage, labor force participation, and education. While no support for the proposition that changes in self-esteem and social support moderate the strain-criminal desistance association was evinced, evidence was found that angry disposition, a measure of negative emotionality, moderated the association between change in chronic stressors and change in criminal activity.

Conclusions—While exploratory in nature, these findings demonstrate the utility of employing GST principles in studies of criminal desistance.

Keywords

General Strain Theory; Desistance; Negative Emotionality

Research examining the criminal career has grown dramatically during the past quarter century. Developmental and life course theories have focused on the transitions, experiences, and changes that occur during young adulthood that help explain the dimensions of participation, frequency, seriousness, persistence and career length of criminal activity during adulthood. And while a voluminous research exists exploring these issues, the dimension of criminal desistance, while emerging as an important dimension to study, has been “downplayed or over-looked” (Gunnison & Mazerolle, 2007, p. 231) until recently. Indeed, a number of scholars have taken note of the dearth of understanding about the causal processes that lead one to reduce or discontinue their criminal activity (Kazemian, 2007; Laub & Sampson, 2001; Piquero, Farrington, & Blumstein, 2003), although interest in understanding desistance is clearly increasing.

Despite this increased focus on understanding the desistance process, Piquero, Farrington, and Blumstein note in their review of criminal career research that, “more needs to be done to identify the effect of various events and experiences that lead persons into and out of

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crime” (2003, p. 392). One such explanation that is well situated to address that question but has yet to be fully utilized is Agnew's general strain theory (GST). Since its introduction by Agnew (1992), the merits of GST as an explanation of crime and delinquency have been well established. A voluminous number of published articles have found support for many of its basic principles, including the core notion that cumulative and increased exposure to strains serves as a risk factor for crime and delinquency (Agnew & Brezina, 1997; Aseltine et al., 2000; Brezina, 1998, 1999; Broidy, 2001; Eitle & Turner, 2002; Hoffman & Cerbone, 1999; Hoffman & Miller, 1998; Mazerolle, 1998; Mazerolle & Maahs, 2000; Mazerolle & Piquero, 1997; 1998; Mazerolle et al., 2000; Paternoster & Mazerolle, 1994). And while some components of the model have not enjoyed a preponderance of support from extant studies (e.g., the notion that several factors may moderate the strain-crime/deviance relationship [Agnew, Brezina, Wright, & Cullen, 2002, p. 43]), the impact of GST on criminological scholarship is truly noteworthy.

Despite this history, the utility in applying GST to issues central to developmental criminology has yet to be tested. While Agnew (1997, p. 101) acknowledged that such approaches to explaining crime have been dominated (on the sociological front) by social learning and social control theories, there are compelling arguments, forwarded by Agnew (2006), that GST is aptly suited to contribute to our understanding of the process of desistance versus persistence. This study used data from a longitudinal study of youth in South Florida to examine whether GST can indeed contribute to our understanding of desistance and persistence in crime.

Background

In response to studies that had failed to support traditional strain theory's core proposition that the inability to achieve desired goals such as middle-class status or economic success would motivate adolescents to engage in delinquency, Agnew (1992) extended classic strain theory by focusing on other possible sources of strain (defined as events or conditions that are disliked by individuals [Agnew, 2006, p. 4]). Instead of one general strain-producing source, Agnew identified three major sources: 1) the failure to achieve positively valued goals, including the disjunction between expectations and actual outcomes and the perception of what would be a fair or just outcome and actual outcomes; 2) the removal (or threat of removal) of positively valued stimuli that the actor already possesses (e.g., the death of a parent or the loss of a girlfriend); and 3) presentation with noxious or negatively valued stimuli, such as abuse. Agnew argued that much of this strain originates from negative relationships that the person has with others and the negative emotions (both emotional states and traits, with the latter being linked to cumulative exposure to strains) such as anger, frustration, and resentment that result from these relationships. The corrective response to these negative emotions may take the form of crime (especially when the costs of crime are relatively low, the individual is experiencing low levels of social control, and the individual is disposed to commit crime; Agnew 2006), with the behavioral solution being instrumental (get back what one lost), retaliatory (strike out against the perceived cause of the stress), or escapist (e.g., engage in substance use to alleviate the displeasure from the negative emotional state) in nature. One can manage these strains legitimately if the actor has effective coping mechanisms, however. Such moderating variables include one's self-concept, one's level of social support, mastery and problem-solving skills (Agnew, 1992). Agnew argued that individuals who are self-efficacious, who have extensive social support networks, and who have a positive self-concept are less likely to resort to crime or deviance in response to exposure to strains. In addition, the inclination of one's peers towards (or against) deviance can affect whether an individual is likely to turn to crime in response to strain (although chronic exposure to strain increases the likelihood that an individual will join with criminal others; Agnew, 2006, p. 43). Thus, explaining crime

involves not only the level of exposure to strains but also the extent and type of coping mechanisms available to the individual and the individual's peer associations.

While GST has been subjected to a number of empirical tests of its propositions, there has been very little effort to this point to extend and integrate the core tenets of the theory to life course criminology. Indeed, Agnew (1997) argued that criticisms of traditional strain theories may help explain this neglect—early strain explanations were roundly criticized because they could not explain the decrease in frequency and the desistance from crime that begins for many offenders in early adulthood (Agnew, 1997, p. 101). The logical inference derived from early strain theories is that crime should increase in early adulthood as young people became more cognizant of their limited opportunities for success (Greenberg, 1977; Agnew, 1997). Agnew's revised strain explanation, however, circumvents this criticism by proffering a compelling explanation for understanding why many youthful offenders dramatically reduce their participation in crime in early adulthood. According to Agnew (1997,2006), GST can be integrated with biological, psychological, and sociological explanations, specifically social control and social learning theories, to explain this pattern of criminal offending, which Moffitt (1993) refers to as “adolescent-limited” offenders.¹ Logically, GST suggests that adolescents are more likely to engage in crime and deviance than either children or adults because they are a) more likely to experience strains (and in particular, strains conducive to crime); and b) are more likely to resort to crime as a coping strategy (Agnew, 2006, p. 111).

A number of factors converge to increase the risk of experiencing strains for adolescents. According to Agnew, adolescents a) experience lower levels of social control than children, which lowers the amount of protection against harms and strains afforded to teens by parents and other loved ones; b) are more likely to associate with delinquent peers, who in turn are more likely to get into conflicts with each other and those outside of the peer group; c) live in a larger, more demanding social world, with increased interactions governed by subtle social cues, resulting in an increased risk of failure and/or negative treatment by peers, teachers, and others; d) greater likelihood of viewing their world as aversive (due to a combination of increased egocentrism during the teen years and a tendency to blame others for problems); and e) limited autonomy to pursue desires and immediate goals, including privileges reserved for adults (Agnew, 1997, 2006). This likelihood of greater exposure to strains (for adolescents) is exacerbated due to an increased risk of employing crime as a coping strategy. Agnew suggests that teens have poorer problem-solving and social skills than adults (children have poor skills as well but are subjected to greater protection from parents) because they are inexperienced in using coping skills. Additionally, adolescents tend to lack important coping options available to adults, such as escape (e.g., leaving an abusive home or dropping out of school) or money (which often facilitates legal coping in response to strains). Adolescents, compared to younger children, are more likely to employ crime as a coping strategy because of the reduced cost of crime (because of the lower social control experienced by teens) and if they are exposed to delinquent peers, are more likely to use crime to cope because of peer pressure, socialization, and as a “face-saving strategy” (Agnew, 1997). Hence, crime and deviance should peak during adolescence because of the convergence between greater exposure/experience with strains and the increased likelihood of coping with the resultant negative affect experienced by engaging in crime/deviance.

¹Agnew (1997; 2006) has also extended GST to explain life-course persistent offending. In short, Agnew argued that the trait of aggressiveness (derived from early childhood traits such as difficult temperament, hyperactivity, attention deficit, impulsivity, and insensitivity) increases the likelihood that an individual will experience negative relationships (because they are aggressive, they are more likely to provoke negative reactions from others, ranging from parents to peers), interpret these relations as aversive (quicker to blame their problems on others), and respond to such adversity with criminal behavior (including being less able to cope legally, and being less aware of the costs of crime).

General Strain Theory, Persistence, and Desistance from Crime

While GST can help make sense of the peak in crime and deviant activity in adolescence for many offenders, it can also be used to explain persistence versus desistance from crime in young adulthood. Although it is a core dimension of life course criminology, research into the correlates of such processes is relatively limited (Kazemian, 2007; Gunnison & Mazerolle, 2007; Loeber & LeBlanc, 1990; Piquero, Farrington, & Blumstein, 2003). Laub and Sampson (2001), in a comprehensive review of the issue, have noted that conceptual, definitional, and measurement issues have limited research exploring the issues of desistance and persistence, despite its importance in developmental criminology. At the conceptual level, the notion of desistance is problematic because, as Maruna wrote, “desistance from crime is an unusual dependent variable for criminologists because it is not an event that happens, but rather it is the sustained absence of a certain type of event (in this case, crime)” (2001, p.17; as quoted in Laub & Sampson, 2001, p. 5). Further, there is debate as to whether the causes of desistance are simply the opposites of the causes of onset of criminal behavior (Gottfredson & Hirschi, 1990), or if there exists notable distinctions in the correlates of each (Farrington, 1992; Uggen & Piliavin, 1998). Additionally, a number of scholars have noted that there is no agreed upon definition of desistance (Bushway et al., 2001; Piquero, Farrington, & Blumstein, 2003; Laub & Sampson, 2001; Kazemian, 2007). Some scholars have proffered a definition of desistance as a *process* rather than a state (Loeber & LeBlanc, 1990; Bushway et al., 2001; Maruna, 2001), emphasizing a reduction in the rate of offending, increased specialization and participation in more minor (as opposed to serious) offenses. This lack of a consistent definition for desistance has helped foster a number of different operational definitions of desistance (see Kazemian, 2007, p. 9 for a table presenting a number of different operational definitions of desistance).² Yet despite these significant encumbrances, understanding the factors underlying desistance versus continued involvement in crime in adulthood has important theoretical and policy implications, particularly if there are distinctive correlates of desistance that are not merely the opposite of the factors associated with onset (Kazemian, 2007).

Agnew (1997, 2006) has proposed a number of propositions derived from GST that explains the processes of desistance and persistence as well. In short, Agnew argued that deceleration from the peak of criminal activity among many adolescents occurs in adulthood because of two factors: a) a reduction in strains; and b) increased likelihood of coping with strains without resorting to crime. Agnew argued that as adolescents transition into adulthood, their social world “begins to narrow and they have more control over the nature of this world” (2006, p.114). Adults are (increasingly) able to exercise more control and autonomy over their work and where they live, they have a smaller, more intimate circle of friends, gravitate towards one romantic partner, and experience less turnover in significant others, such as co-workers, romantic partners, and friends (Agnew, 2006, p. 114). Reduced strain is a likely occurrence for many adults, although Agnew also acknowledged that not all adults experience such a reduction.

In addition to a reduction in strain, adults become more experienced with employing coping strategies beyond crime and deviance. Indeed, adults are more likely to possess important resources such as power and money that allow them to manage strain in legal ways. Furthermore, Agnew suggested that adults, living in more private worlds than adolescents, are more successful in employing cognitive coping strategies such as a reinterpretation of negative events—other peers may both challenge such reinterpretations and remind the

²This concise discussion is only a partial summary of the issues and complexities that have restricted empirical investigations of desistance and persistence from crime, serving to illustrate some of the difficulties in studying this process. Fortunately, there are a number of comprehensive discussions of such issues available (e.g., Kazemian, 2007; Laub & Sampson, 2001; Piquero, Farrington, & Blumstein, 2003).

youth that they had experienced negative treatment (Agnew, 1997, p. 121). As Agnew noted, possessing such resources allows individuals to “increase their bargaining power when dealing with others who treat them in a negative manner” (Agnew, 2006, p.118).

While Agnew did not apply these propositions specifically to the issues of desistance and persistence, their application is relatively straightforward. Desistance among young adults should be associated with both the extent of negative events and relations experienced and with the quality of the social and personal resources available that reduce the likelihood of employing crime or deviant behavior as a coping mechanism. With regards to the issue of exposure to strains, GST suggests that desistance is more likely to occur among adults experiencing fewer negative events and negative relationships (compared to those persisting in crime). Assumed in this discussion is that there exists significant variation in the amount of strain experienced by individuals in young adulthood. Indeed, Agnew (2006) suggested that adults who fail to find loving relationships, get decent jobs, and marshal the resources necessary to make changes in their lives that reduce exposure to negative events and relations will likely not experience fewer strains in adulthood.³

Variation in social and personal resources should also be associated with desistance, according to GST. This expectation should manifest itself in a couple of ways. First, Agnew argued that adults are less likely to find themselves in situations conducive to criminal coping, because they are less likely to have deviant peers—friends who may place pressure on an individual to resort to crime as a face-saving strategy (1997, p. 123). Indeed, Warr (1998) suggested that transitions into such adult roles as marriage may reduce criminal behavior because of the impact such a bond has on the disruption of friendships with deviant peers and a reduction in criminal opportunities. There is obvious variation among young adults in their exposure to criminal peers, however. Adults with few or no criminal peers would be more likely to desist from crime than their counterparts. And second, Agnew (2006) suggested that adolescents have less social support than adults, or at least are less likely to share their problems and ask for support from parents and other loved ones. This suggests that among adults, differences in social support should be associated with criminal desistance.

Recently, Slocum (2010) extended Agnew's discussion of the applicability of GST to the issue of stability and change in criminal careers. Her rich extension of GST principles to these issues included an elaboration on the various pathways in which personality traits such as negative emotionality are associated with stability and change in criminality (by potentially increasing the likelihood of the person actively selecting into stressful situations, by being reared in stressful environs that cultivate/give rise to the development of negative emotionality, and by being shaped in a deviance-stressor amplification cycle, or what Agnew referred to as an amplifying loop; 1997; p. 124). Slocum also argued that negative emotionality may serve as an important moderator (amplifier) of strain-crime relationships (Agnew et al., 2002). According to Agnew et al. (2002), individuals high in negative emotionality have a tendency to experience events as aversive, to attribute these events to the malicious behavior of others, to experience intense emotional reactions to these events ..., and to be disposed to respond to such events in an aggressive or antisocial manner (p. 46; also cited in Slocum, 2010; p. 3). Hence, individuals that are high in negative emotionality may be expected to exhibit a stronger association between stress exposure and criminal behavior, both at one point in time and across the life course.

³Agnew (1997; 2006) acknowledged that developmental criminology has emphasized the social control perspective in explaining the association between such factors as relationship quality and job satisfaction. Agnew, however, suggested that instead of viewing GST as competing against the theoretical contributions of both social control and social learning theory in addressing core issues of developmental criminology, GST is compatible with these theories and their contributions.

In addition to such individual differences/traits, Slocum also elaborated on other GST-based pathways to explaining persistence in criminal behavior. Among the pathways that she identified as crucial to understanding persistence is: a) the role of cumulative exposure to stressors (lifetime exposure to stressors can shape contemporary response to stressors in a number of ways, including depletion of coping resources and shaping cognitive strategies to respond to stressor exposure in deviant ways; Slocum, 2010, pg. 9), and b) the role of chronic stressors (enduring, day-to-day stressful situations) in producing stress proliferation (defined as “the expansion or emergence of stressors within and beyond a situation whose stressfulness was initially more circumscribed” (Pearlin, Aneshensel, & LeBlanc, 1997 p. 223; as cited in Slocum, 2010, p. 11).

Despite the aforementioned reasons for expanding GST to understanding criminal desistance and stability, there are virtually no published studies that have examined how GST principles can be used to predict such processes. The lone exception is a study by Gunnison and Mazerolle (2007), who used data from the National Youth Survey and examined desistance in both serious and less serious crimes from a variety of theoretical approaches, including GST. Using measures of occupation strain, a measure of neighborhood problems, negative life events checklists for both the respondent and parents and a measure of negative relations with adults, they found that there were significant differences in the degree of strain experienced by desisters versus persisters (specifically the measures of neighborhood problems and negative relations with adults), but found that only the measure of negative relations with adults reached statistical significance once other predictors were included.⁴ Additionally, Hoffman and Cerbone (1999) used four years of longitudinal data to investigate the association between social stress exposure and delinquency among young teens. While not examining the issues of desistance and stability in adulthood per se, the results of their growth curve analysis revealed that increased exposure to social stressors did serve to increase involvement in delinquency over time. While both of these studies are provocative, a more comprehensive test of GST principles to the issues of desistance and persistence in criminal activity in adulthood is warranted.

In sum, GST theory can be extended to contribute to our understanding changes in criminal activity (including desistance and persistence) in three ways: a) by expecting that desisters would experience a decrease in negative relations and events; b) expecting that enhancements in social and personal resources will serve to moderate (and weaken) the association between strain and criminal activity over time; and c) expecting that negative emotionality will serve to amplify (moderate) the association between changes in strain and criminal activity. On this basis, GST can be extended to predict differences in changes in criminal activity in adulthood.

Data and Methods

Data

The sample used to gather the data analyzed in the present study is drawn from a longitudinal study of adolescents attending Miami-Dade public schools (Vega & Gil, 1998). The initial study was designed to assess risk and protective factors associated with male adolescent substance use and deviance. In the original study, all 48 of the county's middle schools and all 25 high schools participated (as did alternative schools). The original study was a three wave panel study that initially surveyed students when they were in the 6th or 7th

⁴Gunnison and Mazerolle also found that desisters were less likely to have delinquent peer associations than persisters, which is consistent with both GST and social learning theories of crime/deviance.

grade during the 1990/1991 school year.⁵ These respondents were subsequently surveyed twice more, in the 1991/92 and 1992/93 school years respectively⁶.

Funding was received to add an additional two waves of data collection, which was the data utilized in the present study. Time 4 data collection was conducted in 1998–2000, when 93 percent of the respondents were between the ages of nineteen and twenty-one. A stratified random sample of 1,300 male participants was selected for the additional two waves of data collection. Information on 1,264 of these male prior participants ultimately was released to the field staff. Although a significant number of the target sample had left the area to attend college or for other reasons, 76.4 percent of subjects studied previously at time 4 were successfully interviewed. Time 5 interviews were conducted approximately two years later with a subset of 660 randomly selected males interviewed in Time 4, which represented a success rate of 81.5 percent. A comparison of the sub-sample interviewed in Time 5 with the sample interviewed in Time 4 on 14 dimensions revealed that the sub-sample was representative of those interviewed in Time 4 (Turner, Russell, Glover, and Hutto, 2007). In the present study, males who had participated in all of interviews (i.e., both as pre/early adolescents [Times 1–3] and young adults [Time 4 and Time 5]) and for whom complete data on the variables of interest were available were included. This screening produced a sample of $n=648$.⁷

The original sample was drawn so as to achieve roughly equal representation of non-Hispanic Whites, African Americans, persons of Cuban heritage, and “other Hispanics.” Recognizing the existence of obvious but important cultural variations within ethnic statuses, the present analyses excluded respondents who self-reported their ethnic status as African Haitian or African Caribbean (to minimize the effects of such variations on our results). The sub sample assessed in the present paper consisted of approximately 28 percent White non-Hispanic, 25 percent African American, 24 percent Cuban, and 23 percent non-Cuban Hispanics. A full description of the context and design associated with the earlier (i.e., first three waves) study has been reported by elsewhere (Warheit, 1998), as well as a summary of the findings (Vega & Gil, 1998). A detailed summary of Time 4 and 5 data collection has also been published (Turner & Gil, 2002).

Dependent Variable: *Changes in Criminal Activity*

One obvious quandary for researchers exploring criminal desistance and persistence is how to operationally define it. A number of scholars have noted that there appears to be no universal definition about the length of time that one remains free of criminal offending to ‘qualify’ for desistance, or whether desistance is even a state or a process (Gunnison & Mazerolle, 2007; Bushway, Thornberry, & Krohn, 2003; Steffensmeier & Ulmer, 2005). Farrington (2007, p. 125) noted that desistance refers to both the empirical variable of the observed termination of offending, and the theoretical construct of “decreases in underlying frequency, variety, or seriousness of offending.” Accepting this later definition, the present analyses utilized a dependent variable that is the *change in self-reported criminal activity score*. This measure is based on a variety score of crime, which captures offense specific involvement in a number of different criminal acts. A total of eight items are used to capture a diverse array of illegal behaviors, including (1) using force to get money or expensive things from another person, (2) breaking and entry, (3) damaging or destroying property that

⁵In addition to the male students, 669 female students were also surveyed, but only from six schools.

⁶Of the 9,763 male students scheduled to enter grades 6 and 7, complete questionnaires were obtained from 7,386 (70.8 percent) of students in time 1, 6,089 students at time 2 and 5370 boys at time 3.

⁷In addition to the male respondents, female respondents were also sampled and interviewed at time 4 and 5. The present study is based on the male sample, primarily because of the extremely low rates of self-reported criminal activity among the sample of females. Details regarding the sampling strategy for the females are available (Turner & Gil, 2002).

didn't belong to one, (4) taking a car for a ride without the owner's permission, (5) taking something worth more than fifty dollars when you weren't supposed to, (6) carrying a hand gun when you went out, (7) taking more than twenty dollars from family or friends without permission, and (8) taking part in gang fights.⁸ The questions asked the respondent to report whether they had committed each of the offenses over the past month. Hindelang, Hirschi, and Weis (1981) have argued that 'variety' measures of crime and deviance are more valid and reliable compared to 'frequency' measures that are typically employed (see also Rowe, Rodgers, & Mesceck-Bushey, 1992). In order to capture change in such behavior (from Wave 4 to Wave 5), a change score was calculated from the standardized scores from Wave 4 and Wave 5.

Independent Variables

Strain Measures—Three domains of social stress were considered in the study: recent life events, enduring or chronic stressors, and the lifetime occurrence of major and potentially traumatic events. Two domains—recent life events and chronic stressors—capture strains experienced by the respondent in the past year. *Recent Life Events* is comprised of a checklist of thirty-three events occurring over the past year at the time of the interview. The events included are typical of those included in a variety of other event lists (e.g. Avison & Turner, 1988; Sarason, Johnson, & Siegel, 1978; Turner, Wheaton, & Lloyd, 1995). *Chronic Stressors* measure those everyday stressful conditions that are more continuous (versus discrete events) without a natural endpoint. A measure composed of thirty-six items was developed using the logic and items of Wheaton's (1991; 1994; see also Turner et al., 1995) measure as a starting point. Modifications applied to the instrument were based on the judgment of the research team and focus group sessions with groups of young adults of African American and Hispanic heritage. These changes were designed to better capture enduring stressors likely to be experienced by young persons in young adulthood. Included in this inventory (measured at time 5) is such aspects as general or ambient stress (three items), employment stress (five items), unemployment stress (one item), relationship stress (six items), childcare stress (three items), residence stress (six items), school-related stress (five items), and stress related to relationships with parents/guardians (seven items).⁹ Changes scores for both recent life events and chronic stressors were calculated from the standardized scores from Wave 4 and Wave 5.

In addition to exposure to strains in the past year, a cumulative measure of exposure to strains is also considered to capture the influence of cumulative strains on criminal activity. *Lifetime Negative Events* are assessed by forty-three items (measured at time 4; tally transformed into a standardized score) addressed to the occurrence of violent, traumatic, and other significant adverse events that have occurred over one's entire life. There is compelling evidence that such events can have behavioral and mental health consequences despite occurring years or even decades earlier (Turner & Lloyd, 1999; Kessler & Magee, 1994; Rutter, 1989; Lauer & Lauer, 1991) and may contribute to stability in offending by shaping one's contemporary reaction to stress exposure (Slocum, 2010). Included in this checklist were questions about major adverse events such as divorce, abandonment, parental substance use problems and grade failure (eleven items), death events (eight items), other traumatic events that occurred to the respondent, such as being physically abused, sexually assaulted, or involved in a serious accident (thirteen items), and items capturing what Agnew refers to as vicarious strains, which includes witnessing violent events, such as

⁸Because of the ambiguity of the legality of carrying a handgun (depending upon circumstances, it may not be illegal for an adult to carry a hand gun when "going out"), the analyses were redone with this item omitted. The omission of this item made no substantive differences in the results.

⁹Since some questions were not relevant to respondents (e.g., a respondent has no children), a mean score was calculated over the number of questions that the respondent answered to develop a measure of chronic stress for these analyses.

seeing someone killed or a parent being abused by a spouse (six items), and receiving traumatic news, such as the rape or suicide of someone you knew (five items). Multiple occurrences of the same event are not included in the overall count. Appendix A reports the items used to comprise the social stressors inventories.

Personal and Social Resources—Five change scores were calculated to capture changes from wave 4 to wave 5 in one's personal and social resources. *Social Support* is a global measure of perceived social support constructed by combining scales measuring perceived social support from family (eight items) and friends (eight items). A mean score was calculated over the number of questions that the respondent answered to develop a measure of global social support. Higher scores in the change measure reflect increases in social support (from wave 4 to wave 5; Cronbach's $\alpha = .90$). *Self-esteem* is measured by using a six-item index developed by Rosenberg (1979), with higher change scores indicating increased self-esteem from wave 4 to wave 5 (Cronbach's $\alpha = .77$). *Number of friends arrested* was included as a change score, capturing the reported number of friends that have been arrested in the past year for a crime. The available responses included: 1) none; 2) very few; 3) a few; 4) some; 5) many; and 6) all. *Mastery* is measured by employing a seven item index developed by Pearlin and Schooler (1978), with higher scores representing greater belief that one controls their life-chances (Cronbach's $\alpha = .71$). *Moral beliefs* is a six item summated scale that is a subset of Harding and Phillips' (1986) morally debatable behaviors scale. It reflects the extent to which the respondent believes it is just to engage in unlawful/immoral behaviors (i.e., claiming government benefits not entitled to you, cheating on taxes, buying stolen goods, joyriding, not paying for public transportation, lying in your own interest). Higher scores indicate weaker moral inhibitions (Cronbach's $\alpha = .79$).

Angry Disposition—*Angry disposition* is measured by using five items derived from Jesness' (1988) personality inventory. These items include such statements as "I seem to blow up over little things that really don't matter very much"; "I get angry very quickly"; "At times I feel like blowing up over little things"; "When I get really angry, I'll do just about anything"; and "I can't seem to take much kidding or teasing." Each of these statements had responses that ranged from "very true" to "somewhat true" to "not at all true." The reliability for the angry disposition scale is .82. While no change score was calculated for angry disposition (the data did not include these items at wave 4), there is evidence that such negative emotionality is a relatively stable trait across the life span (Caspi and Roberts, 2001).

In the present study, angry disposition is treated as an indicator of negative emotionality, defined as a tendency to experience negative emotions (Miller & Lyman, 2001, p. 770, as referenced in Slocum, 2010, p. 3). Agnew and colleagues (2002; pg. 46) posited that negative emotionality, as a personality trait, serves to moderate the association between strain and crime. However, trait anger (angry disposition) has also been theorized as a *consequence* of strain and measures of trait anger have been used to test whether anger mediates the strain-crime relationship, with several studies finding support for such a mediating effect (Aseltine et al., 2000; Broidy, 2001; Mazerolle et al., 2000; Mazerolle & Piquero, 1997, 1998). Furthermore, Mazerolle, Piquero, and Capowich (2003) argue that while related, GST theory posits that *situational*, not trait anger is the consequence of strain exposure that mediates the strain-crime relationship. Indeed, Agnew and colleagues (2002; pg. 55) insinuate that because negative emotionality is largely captured by trait anger scales, and hence may partially mediate the association between strain and crime, negative emotionality conditions the effect of strain on such behavior as well.

Demographic Variables—The influence of race and ethnicity was considered in the analysis. *Race/ethnicity* is a self-reported measure comprised of four categories: Cuban-

Americans, African-Americans, and others of Hispanic origin are each dummy-coded in the analyses, while White, non-Hispanics are the omitted category. A measure of *education* was also considered, which is dummy coded for three discrete categories: high school graduate, some college (including trade/vocational school beyond high school) and college graduate. Respondents with less than a high school degree were the omitted category. *Hours worked* is included as a measure of labor force involvement; it has been calculated as a change score (work hours from wave 4 to wave 5). Finally, *marital status* was also considered, with dummy codes indicating married or divorced (never married is the omitted category).

Results

Table 1 presents the summary statistics for the variables included in the analyses. What is not told by the reported statistics, however, is the fact that most respondents are reporting that they did not commit a crime in the past month (in wave 5): only 7.72 percent of the respondents report having committed at least one crime in the past month. Relatively to the percentage of respondents who reported that they had committed at least one crime in the past month in wave 4, 31.79 percent, it is apparent that this group was largely desisting from crime during this period of time. Likewise, the changes in exposure to social stressors over time follows an expected pattern: a slight decrease in the mean exposure to recent life events (3.70 to 2.61) from wave 4 to wave 5, but a substantial increase in reported exposure to chronic stressors (13.76 to 35.12), as the respondents take on more adult responsibilities and challenges. Such increases in exposure to social stress, however, may be offset by increases in personal and social resources, if GST is correct. Indeed, in the sample, the average level of self esteem (24.65 to 27.96) and global social support (54.8 To 62.42) both increased from wave 4 to wave 5.

Table 2 presents the results of the robust regression models estimating the change in criminal activity among the sample of young adult males.¹⁰ In the baseline model (column 1) and of the demographic and other control variables considered, only being divorced (relative to never-married) and belonging to the racial/ethnic category “other Hispanic” (relative to being a non-Hispanic White) were significant predictors of a change in self-reported criminal activity. Somewhat surprisingly, people who are divorced are significantly less involved in criminal activity than those who are single, but there exists no significant difference in the change in criminal activity between singles and married respondents. While speculative, two possibilities, both consistent with GST, are likely. Going through a divorce may serve to decrease the opportunity to engage in criminal behavior, because of the disruptive nature of divorcing, potentially changing residences, disruptions in friendship networks, etc. It may also serve to reduce criminal behavior because a noxious stimuli was removed from one's environment, however.

The results reported in column two includes the strain measures in the model. Of the different domains, two domains, the change in exposure to recent life events and the change in exposure to chronic strains, are found to be significant predictors of the dependent variable. Consistent with GST and the aforementioned predictions, people reporting an increase in exposure to social stress (either in the form of chronic strains or stressful events) report greater involvement in criminal activity, whereas those who report a decrease in exposure to such strains report a reduction in criminal activity.¹¹

¹⁰Robust regression models were estimated because of evidence of outlier cases. *Stata 10* performs a robust regression using iteratively reweighted least squares with Huber and biweight functions tuned for 95 percent Gaussian efficiency (Hamilton, 2009: p. 254).

Column three of table 2 presents the model that in addition to the strain and demographic variables also includes the change measures for personal and social resources and the measure of negative emotionality, anger proneness.¹² Of the five change scores, only one was found to be a significant predictor of the dependent variable. As expected, changes in the number of friends arrested was associated with changes in self-reported criminal activity, such that increases in friends arrested was associated with increased criminal activity (from wave 4 to wave 5). Neither changes in social support, self esteem, or mastery were found to be significant predictors of the dependent variable. And although the inclusion of the change measure for exposure to deviant friends was statistically significant, there is very little attenuation of the significant strain coefficients in this model, suggesting that the association between changes in exposure to social stressors and changes in criminal activity were not mediated by changes in contact with deviant peers. Likewise, angry disposition appeared to have little direct influence on the dependent variable.

Finally, analyses that included interaction terms capturing the potential moderating role of changes in the level of personal and social resources were examined, as well as the potential role of angry disposition as a moderator (columns four, five, and six). While the models examining the interaction terms between changes in chronic stressors (column four) and recent life events (column five) and the changes in self esteem, mastery, and global social support failed to provide any evidence of such resources serving as moderators, compelling findings are revealed in model reported in column 6. In this model, angry disposition was examined as a potential moderator of the association between the associations between the changes in the social stressors and the dependent variable. Of the two interaction terms, one was found to be statistically significant: the interaction between angry disposition and the change in chronic stressors. To illustrate this moderator, figure one provides select values of the two variables included in the interaction term. As one can easily evince from the figure, respondents with relatively low and mean levels of angry disposition are predicted to display modest increases in criminal activity over time as exposure to chronic stressors increases. For individuals high in this negative emotionality, however, a significant change in exposure to chronic stressors leads to a much greater change in criminal activity over time. This finding is consistent with the tenets of GST generally as well as recent predictions proffered by Slocum (2010) regarding the role of negative emotionality in predicting criminal persistence.

Discussion

The present study expanded on research that has sought to continue to expand our understanding of criminal desistance and persistence among young adults by utilizing General Strain Theory principles. Although criminal desistance is a core concept of life course criminology, there has been a surprising dearth of scholarship examining the factors that distinguish between those who continue to engage in crime during adulthood and those that do not (Laub & Sampson, 2001; Maruna, 2001). In response to this shortcoming, the present study examined whether changes in strain and personal and social resources can

¹¹In addition to the measures of strain included in the analyses, additional analyses were conducted with only strain measures guided by Agnew's (2001) arguments identifying the types of strains that are most likely to lead to crime and delinquency. In supplemental analyses (not reported; available upon request), twenty-six items were identified and change scores were calculated across four domains—recent life events capturing criminal victimization or negative school experiences; chronic strains associated with work; and two domains capturing experiences with discrimination (day to day and specific events). Analyses including each of the four indices were conducted, as well as a single index constructed by summing the standardized scores from each of these four indices. The results of these analyses failed to provide support for Agnew's suggestion that some types of strains are more strongly related to crime than others, as none of the strain indices in these analyses were found to be statistically significant predictors of the dependent variable. Given the limited number of strains that were available in the present data to evaluate Agnew's (2001) claims, I simply report these “non-findings” as an explanation for why the present analyses do not include/exclude certain strains.

¹²Tests for multicollinearity revealed little problems (for example, the average V.I.F. score for the full model was 1.21).

explain changes in self-reported criminal offending across time. The results demonstrated that importantly, the core GST relationship between strain and crime was also found to be an important predictor of desistance from criminal behavior, even after controlling for important adult social roles such as marriage, labor force participation, and education. This finding is consistent with most previous tests of GST, although only one prior published study had examined the utility of strain in predicting criminal desistance (Gunnison & Mazerolle, 2007).

The present study found no support for the notion that changes in resources such as self-esteem and social support served to moderate the association between strain and criminal activity. Overall, the inconsistency in finding evidence of such moderating factors has become so baffling across published tests of GST that it now warrants study of its own. Future research testing the merits of GST in predicting change in criminal behavior should include a comprehensive appraisal of the conditions under which the strain-crime relationship does appear to be moderated by such resources as self-esteem, social support, and other coping mechanisms/styles. For example, the detection of moderating factors may not be solely contingent upon the type of social or personal resource being considered, but also on the types of strain being experienced. Additionally, most tests of such conditional relationships have examined linear effects; it may be possible that nonlinear effects or threshold levels may provide more robust evidence of conditional relationships.

While changes in self-esteem, social support, and mastery were not predictive of the dependent variable, the present study revealed evidence that an important personality trait, angry disposition, did moderate the association between changes in chronic stressor exposure and changes in criminal activity in the expected direction (respondents high in angry disposition exhibited an amplified association between changes in chronic stress exposure and changes in criminal activity). This finding is consistent with the prior research of Agnew and colleagues (2002), who found that respondents who were high in negative emotionality exhibited a stronger association between strain exposure and delinquency. While a number of past studies have found that trait anger mediates the association between strain and crime, the present study reinforces the notion that dispositional anger may play an important role in moderating the strain-crime association, rather than mediating it (see also Mazerolle, Piquero & Capowich, 2003). Generally, the present research reinforced the importance that such personality traits may play in explaining stability in criminal behavior. Future research should explore whether other personality traits, including low constraint, may predict criminal stability and desistance.

Additionally, the present study failed to find that important adult social roles such as being married, hours worked, or post-high school educational success were significant predictors of criminal desistance. Given the central importance of such adult social roles in other explanations of criminal desistance, the present study, minimally, suggests that changes in strain exposure may represent an underappreciated influence on criminal desistance. While the present study provided a limited glimpse of such adult social roles, these findings warrant that future studies of criminal desistance consider examining changes in strain in addition to transitions into adult social roles.

The present study was limited by a number of important drawbacks. First, due to the nature of the study design, the determination of changes in criminal behavior is based upon self-reported activity over approximately two years. Collecting information about criminal offending patterns for more time periods may alter the pattern of findings revealed in the present study—further research testing the merits of GST in explaining criminal desistance and persistence following individuals over a number of time periods is warranted. Second, although the data is longitudinal, there were only two waves of data collection (waves 4 and

5) that included the critical social strain measures. Hence, the present analyses could not address issues of causality; it is possible that the change in criminal behavior is influencing one's change in exposure to social stressors (i.e., the aforementioned stressor-deviance amplification process, see Slocum 2010, pg. 7–8 for a good discussion). Third, the change score capturing self-reported criminal activity is somewhat limited in comprehensiveness—a different index of self-reported criminal activity may have spawned different results than those reported. Additionally, other important proposed moderators of the link between strain and crime, such as low self-control, were unavailable to include in the analyses. The consideration of additional moderators may have produced different findings than those reported here. Finally, the unique nature of the sample (drawn from a representative sample of South Florida males) may have limited generalizability to other populations. In particular, additional research should examine whether the findings reported in the present study are also predictive of the criminal desistance for females. Broidy and Agnew (1997; p. 287) have posited that while GST provides a compelling explanation of female crime and deviance, females tend to experience different types of strain (relative to males), differ in their emotional responses to strain (females are more likely to experience depression, guilt, and anxiety in addition to anger), and differ in coping strategies, opportunities to commit crime, and the disposition to engage in crime. Such differences may produce a much different portrait of the association between changes in strain, personal and social resources, and changes in criminal activity for females than the one that was painted for males in the present study.

Despite these limitations, the present study offered a contribution to emerging scholarship on the social factors that influence criminal desistance versus persistence during adulthood. Indeed, this study has important implications for the study of criminal desistance and life course criminology generally. Changes in strain exposure appear to play an important role in distinguishing desistance from persistence. Even after considering other adult social roles, these results underscore the continuing importance of negative experiences and relationships in understanding crime into adulthood, especially in conjunction with personality traits such as negative emotionality. Rather than being seen as an alternative explanation, the present findings should be viewed as being complementary to many of the prior studies that have emphasized the role of learning and social control theories in explaining cessation from crime. Indeed, future studies of desistance and persistence would be well served to include GST principles.

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Figure 1. Estimated Change in Self-Reported Criminal Activity Given select values of Δ Chronic Strains and Angry Disposition

Predictions based on a single, non-Hispanic White, with no college. All other variables equal mean values.

Table 1

Descriptive Statistics for the Variables included in the Analyses (n=648)

Variable	Mean/(P)	SD	Minimum	Maximum
Δ Self-Reported Criminal Activity	.00	1.18	-8.27	5.18
Age	22.57	.89	19	26
Black	.25			
Cuban-American	.24			
Other Hispanic	.23			
Married	.07			
Divorced	.01			
Δ Hours working	5.38	21.95	-70	80
Some college	.63			
College Graduate	.12			
Lifetime Negative Events	.12	1.01	-1.42	3.32
Δ Chronic Strains	-.03	1.06	-5.11	4.42
Δ Recent Life Events	.03	1.13	-6.17	4.57
Δ Global social support	7.63	6.45	-24	29
Δ Self esteem	3.31	2.57	-9	11
Δ Moral Beliefs	-1.79	6.50	-36	31
Δ Mastery	.44	4.20	-15	15
Δ Number of Friends Arrested	-.06	1.22	-5	5
Angry Disposition	6.38	1.99	5	15

Table 2
Robust Regression estimating Change in Self-Reported Criminal Activity among Young Adult Males (N=648)

	1	2	3	4	5	6
Age	-.032 (.047)	-.005 (.046)	-.005 (.046)	-.002 (.047)	-.011 (.047)	-.002 (.047)
Black	-.021 (.127)	.068 (.131)	.059 (.131)	.067 (.131)	.044 (.130)	.061 (.130)
Cuban-American	-.023 (.061)	-.035 (.109)	-.052 (.108)	-.043 (.110)	-.053 (.105)	-.045 (.108)
Other Hispanic	-.142 (.062)	-.135 (.136)	-.187 (.136)	-.165 (.135)	-.196 (.136)	-.179 (.135)
Married	.349 (.242)	.318 (.227)	.302 (.220)	.288 (.221)	.304 (.219)	.268 (.210)
Divorced	-1.132* (.520)	-1.097* (.518)	-1.159* (.501)	-1.190* (.537)	-1.154* (.540)	-1.216* (.559)
Δ Hours working	-.001 (.002)	-.002 (.002)	-.002 (.002)	-.002 (.002)	-.002 (.002)	-.002 (.002)
Some College	.178 (.137)	.158 (.132)	.179 (.132)	.187 (.134)	.183 (.131)	.207 (.132)
College Graduate	.066 (.154)	.041 (.153)	.043 (.151)	.044 (.153)	.038 (.143)	.053 (.151)
<i>Strain Measures</i>						
Lifetime Negative Events		-.120 (.063)	-.117 (.061)	-.123* (.062)	-.127* (.055)	-.108 (.060)
Δ Chronic Strains		.142** (.054)	.142** (.054)	.048 (.123)	.140* (.054)	-.183 (.141)
Δ Recent Life Events		.116* (.052)	.109* (.051)	.110* (.052)	.244* (.116)	-.088 (.180)
<i>Personal and Social Resources</i>						
Δ Global social support			.009 (.009)	.009 (.009)	.011 (.009)	.008 (.009)
Δ Self esteem			-.016 (.021)	-.009 (.020)	-.013 (.019)	-.011 (.020)
Δ Moral Beliefs			.003 (.009)	.003 (.009)	.002 (.009)	.003 (.009)
Δ Mastery			-.002 (.013)	-.002 (.013)	-.002 (.014)	-.003 (.013)
Δ Number of Friends Arrested			.093* (.044)	.091* (.044)	.095* (.045)	.083 (.043)
Angry Disposition			.013 (.030)	.015 (.029)	.010 (.029)	.009 (.028)
<i>Interactions</i>						
Δ Chronic Strains* Δ Global social support				-.002 (.009)		
Δ Chronic Strains* Δ Self esteem				.029 (.024)		
Δ Chronic Strains* Δ Number of Friends Arrested				.020 (.044)		
Δ Chronic Strains* Δ Mastery				.010 (.012)		

	1	2	3	4	5	6
Δ Recent Life Events * Δ Global social support					-.008 (.011)	
Δ Recent Life Events * Δ Self esteem					-.021 (.022)	
Δ Recent Life Events * Δ Number of Friends Arrested					.053 (.045)	
Δ Recent Life Events * Δ Mastery					-.009 (.014)	
Δ Chronic Strains * Angry Disposition						.047* (.021)
Δ Recent Life Events * Angry Disposition						.031 (.029)
Constant	.639 (1.091)	.038 (1.081)	-.031 (1.106)	.076 (1.110)	.076 (1.110)	-.128 (1.105)
R^2	.022	.069	.081	.094	.094	.099

* $p < .05$

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