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Spare the Rod, Endanger the Child? Strain, Race/Ethnicity, and Serious Delinquency

Abstract

General strain theory (GST) has evolved into a comprehensive theory of delinquency by incorporating factors that condition the relationship between strain and delinquency, as well as acknowledging the subjective nature of strain. Our study advances GST by examining the conditioning role of race and the manner in which race influences the subjective experience of strain. Examining a nationally representative sample of adolescents, we find that minorities generally experience greater strain. However, the effect of strain is not consistently more criminogenic for minorities. Our research suggests that the impact of strain on delinquency is conditioned by the socio-cultural context of race/ethnicity.

Keywords *Strain Delinquency Race/Ethnicity Corporal Punishment*

Running Head: Strain, Race/Ethnicity, and Serious Delinquency

“Hitting adults is called assault. Hitting animals is called cruelty. Hitting children is ‘for their own good.’”¹

Introduction

“Spare the rod and spoil the child” is commonly used to succinctly begin and end discussions about corporal punishment and the raising of children. Among prominent comedians and entertainment personalities, appealing to largely working class or non-white audiences, remembrances of spankings are frequent tools to pass commentary on the state of children while conveying authenticity and providing light-hearted humor. Familiar bits by Eddie Murphy, Sinbad, Bill Cosby, and Jeff Foxworthy are often some of their most popular routines. The power of these stories is rooted in their normative dimensions. They represent shared elements of social life and, as such, often go unchallenged. It is not surprising then, that given the quite different

¹From political cartoon in *Abolishing Corporal Punishment of Children: Questions and Answers*, Council of European Publishers, 2007.

social worlds between most blacks and whites we find considerable variation in their support of corporal punishment.

Most U.S. parents report using physical punishment, but some group differences exist across race regarding its relative frequency, with African-American parents generally more likely to endorse and use physical punishment compared to other race/ethnic groups (Alvy, 1987; Deater-Deckard & Dodge, 1997; Day, Peterson, & McCracken, 1998; Ellison & Sherkat, 1993; Flynn, 1994; Giles-Sim, Straus, & Sugerma, 1995; Lansford et al., 2004). It has been argued that an emphasis on the use of corporal punishment by African Americans to secure obedience developed in response to slavery and Jim Crow (Alvy, 1987; Kohn, 1969; Young, 1970). It could well have been a matter of life or death for African-American children to be obedient in these eras, as misbehavior could result in being sold or lynched. Corporal punishment was applied to ensure unquestioned obedience in light of dire circumstances. On one hand, evidence that blacks continue to have more favorable attitudes toward spanking than whites (Alvy, 1987; Deater-Deckard & Dodge, 1997; Day et al., 1998; Ellison & Sherkat, 1993; Flynn 1994; Giles-Sim et al., 1995; Lansford et al., 2004) is viewed as a dysfunctional persistence of values from the era of slavery or a reaction to discrimination and poverty (Kelley, Power & Wimbush, 1992; Pinderhughes et al., 2000). On the other hand, however, sociologists such as Elijah Anderson (1999) argue that the environments of many African-American youth still require their parents or caregivers to demand unquestioned obedience. For example, Elijah Anderson (1997) asserts that, in the inner-city setting, African-American parents that are committed to middle-class values are strict in their childrearing practices and liberal in their use of corporal punishment. The threat is no longer having children lynched or sold, but losing a child to street life or to a quick death from the violence surrounding the drug trade and other crime in economically-stressed minority

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communities. Moreover, Anderson (1997) asserts that “street” families that are more attuned to oppositional values are also quick to spank their children. In fact, child maltreatment researcher Murray Straus describes being at a sociological conference with Elijah Anderson at which Anderson stated, “I was whupped, and I’m OK. If you live in a society in which respect means willingness to be violent to uphold one’s principles and be respected, how can parents who are not willing to whup a child be respected?” (Straus, 2001, p. 116-117).² Research indicates that in some minority communities, strict discipline is viewed as evidence that parents are caring of children’s well-being (Mosby et al., 1999; Whaley, 2000). Other research indicates that parents of white preschoolers are ambivalent about spanking, while black parents view spanking more positively and are much more likely to see spanking as a valuable tool for teaching lessons of obedience to authority and appropriate social behavior (Alvy, 1987).

Evidence from the literature on corporal punishment and child maltreatment is especially pertinent for research linking strain and delinquency due to the preponderance of measures of harsh punishment and abuse as indicators of “negative stimuli” that increases deviant behavior. To explore portions of this debate, this study examines how race and ethnicity alter adolescents’ reactions to interpersonal strain. In this paper we examine racial variation in response to general strain among adolescents, suggesting three reasons that this is an excellent arena for examining Agnew’s refinements to General Strain Theory (GST). First, preliminary research on the relationship between “justness” and strain (Spohn & Kurtz 2011) suggests that this is a fruitful avenue for future refinements of GST when combined with the historical legacies of racism and discrimination that have produced a lens through which racial minorities in the United States view negative events as just or unjust (Fredrickson 2002; Omi & Winant 1994). Second, we

² Straus, standing in staunch opposition to corporal punishment, suggests that Anderson is “OK” despite his exposure to corporal punishment, not as a result of it (2001, p. 117).

predict that the historical manifestations of cultural differences across racial groups and similarly historical racial differences in structural inequalities impact the process through which events are subjectively viewed as negative or immaterial. Finally, we suggest that viewing race/ethnicity as a context in which individuals subjectively experience strain allows us to provide insight into the classical debate between the relative importance of cultural and structural causes of crime, analyzed most famously by Ruth Kornhauser (1979).

The remainder of this paper will proceed according to the following. First, after a brief summary of GST, we focus on research that concerns the interaction of strain and race/ethnicity on delinquent behavior. Next, we address theories that have been developed to explain why race/ethnicity might be expected to condition the strain-delinquency relationship. To guide this discussion, we revisit the focus of our introduction, namely, the unique role of race and ethnicity as an historically embedded social context that conditions the impact of strain on serious delinquency. Third, we test theoretically-derived hypotheses using data from a nationally-representative sample of U.S. adolescents. Finally, we discuss the implications of our empirical findings for GST and our understanding of the roles of structural inequality and culture in the broader field of criminology.

Research on the Interaction of Strain and Race/Ethnicity

Within the juvenile delinquency literature, a focus on individual-level, interpersonal strain was initiated by Robert Agnew (1992) in the development of GST. Agnew set out to develop a strain theory that was more general than Merton's strain/anomie theory, as well as more applicable for explaining deviance among adolescents. Whereas Merton's (1938) anomie theory focused on frustrated attempts to achieve desired goals, most empirical tests of GST have focused on strain in the form of negative stimuli. Agnew (1992) argued that noxious stimuli

might lead to delinquent behavior if an adolescent attempts to escape from the negative stimuli or seeks revenge against the negative stimuli or similar targets. Moreover, exposure to negative stimuli and the resulting anger and negative emotions may lead to general acting out behaviors and delinquency such as vandalism.

Since his initial development of GST, Agnew (2001; 2006) clarified exactly which forms of strain should be most likely to result in delinquency. He asserts that strains are most likely to produce delinquency if they 1) are seen as unjust, 2) are seen as high in magnitude, 3) are associated with low social control, or 4) create pressures to engage in criminal coping. In refining his perspective, Agnew also emphasizes the importance of distinguishing between “objective strains,” which refer to events or conditions that are disliked nearly universally, and “subjective strains” which are events or conditions that are disliked by the people who have experienced them (Agnew 2001; Agnew 2006; Froggio & Agnew 2007).

As the measures of strain available in our data primarily focus on violent victimization ranging from harsh corporal punishment to being a victim of assault, this review will focus on research adopting similar constructs. The majority of this research compares white and black samples, although some studies also include additional groups such as Hispanics and Asians. We will first review literature on corporal punishment and then review findings regarding physical abuse.

A recent review of cultural differences and similarities in the relationships between corporal punishment and youths’ adjustment (Lansford, 2010) reports four primary patterns: 1) studies reporting a significant relationship between corporal punishment and problem behaviors for European Americans, but little or no relationship between these constructs for African American or Hispanics; 2) studies reporting a *positive relationship* between corporal punishment

and behavioral problems for European Americans, but a *negative relationship* between these constructs for African Americans and Hispanics; 3) a study that reports that the relationship between corporal punishment and behavioral problems is stronger for African Americans than for European Americans; and, 4) studies reporting no racial or ethnic differences in their models. This lack of consensus in research findings indicates the complexity of the problem and the necessity to more carefully specify the measures of strain being examined.

Some of the most thorough research on black/white differences in the impact of physical punishment stems from Dodge, Bates, and Pettit's (1990) 15-year longitudinal Child Development Project comparing 466 white youth to 100 black youth. Youth were first examined as they entered kindergarten, and researchers captured separate measures of corporal punishment and a history of physical abuse. This research suggests that in middle childhood, physical punishment is positively related to aggressive behavior problems for European Americans, but the effect is negligible and nonsignificant for African Americans (Deater-Deckard et al., 1996). This pattern was found to persist into adolescence for African Americans (Lansford et al., 2004) and Rodriguez and Belshaw (2010) report similar findings for Hispanic adolescents, who are less impacted by physically abusive punishment than their white counterparts. These findings are consistent with Lansford's (2010) first pattern reported above.

When researchers focus on child abuse rather than corporal punishment, however, reported relationships differ. For example, the Child Development ~~Project~~ data suggests that, in contrast to the moderating effects of race on the relationship between corporal punishment and behavioral problems, the relationship between physical abuse and behavioral problems is *racially invariant*: a moderate positive relationship between physical abuse and behavioral problems is found for both European Americans and African Americans (Lansford et al., 2002).

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A limited number of articles in the criminology literature have examined the conditioning effect of race on the relationship between strain and delinquency. For example, examining a sample of southwestern Mexican-American adolescents, Jennings et al. (2009) incorporate multiple measures of strain (including physical abuse and sexual abuse), negative emotions, and coping resources, finding that GST is fairly generalizable to this non-white sample.

Other tests of GST have included youth from two or more groups of race/ethnicity and tested the conditioning impact of race. For instance, Eitle and Turner (2003) conducted a study examining the impact of recent life events, chronic stressors, and lifetime major events on the criminality of young adult males. They found differences in the forms of strain that significantly impacted participation in crime across racial subgroups. However, the use of multiplicative terms and subgroup analysis produced no significant race/strain interactions. In a study focusing on high-risk youth under probation supervision that compared a white sample to a nonwhite sample composed primarily of blacks, strain in the form of abuse appeared to have a stronger impact on nonwhites, however no Z-tests were calculated to confirm interactions effects (Piquero & Sealock, 2010). A final study examined the impact of a variety of types of strain (including physical assault and physically abusive punishment) on whites versus Hispanics using a nationally representative sample of adolescents (Rodriguez & Belshaw, 2010). This research indicated that whites are more susceptible to strain than Hispanic adolescents, but again no Z-tests were calculated to confirm a moderating effect of ethnicity.

In summary, these studies from the criminology literature, with the exception of Eitle and Turner (2003), include measures of strain that include physical abuse or physical punishment, similar to research reported by researchers in the field of child maltreatment. The results of these studies are generally consistent with the first pattern reported by Lansford's (2010) review of

research on race, corporal punishment, and problem behaviors: strain tends to have a larger impact on white youth as compared to minority youth. However, more rigorous methodology is needed for conclusive evidence.

Theory on the Interaction of Strain and Race/Ethnicity

We suggest that there are theoretical reasons to expect that the cultural context of racial minorities might either increase or decrease the impact of strain such as corporal punishment or abuse on delinquency. We will discuss each of these theoretical explanations in turn.

Vulnerability

If there are differences in how minorities experience strain or react to strain, they might be either more vulnerable or more resilient to strain as compared to whites. In addressing the role of race and ethnicity for GST, Agnew consistently adopts the former position. For example, in describing the role of race and ethnicity in general strain theory, Agnew states that individuals have a “general desire to be treated in a just or fair manner” (1999, p. 133). Prejudice and discrimination based on ascribed characteristics such as race and ethnicity represent a fundamental violation of this desire, possibly making adolescents more susceptible to other forms of strain (Agnew, 2001). Feelings of frustration and powerlessness can push minority youth into negative outcomes. For example, perceptions of discrimination might make minorities more likely to adopt deviant adaptations when confronted with strain. Regarding indirect effects, it seems particularly likely that individuals facing discrimination would be more likely to react to strain with anger.

In a recent elaboration on race and GST, [Agnew and his colleagues described types of strain that should be unique to racial and ethnic minorities or more salient for minorities because](#)

these strains tend to be perceived as unjust, be perceived as high in magnitude, be associated with low social control, and/or produce an incentive to engage in criminal coping. These types of strain are economic strain, family strain, educational strain, criminal victimization, discrimination, and community strain (Kaufman, Rebellon, Thaxton, & Agnew, 2008).

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In addition to experiencing higher levels of strain, Agnew and colleagues (Kaufman et al., 2008) describe reasons why minorities may be more likely than whites to react to strain with delinquency. First, they argue that minorities are more likely to have cognitive attributions leading to arousal as a result of a social, economic, and political system that appears unjust to racial minorities. Second, the disadvantaged status of minorities may allow them fewer resources for coping with strain in conventional ways. Finally, minorities may be more likely to hold beliefs and values conducive to crime. For example, if males in impoverished inner-city communities have difficulty achieving self-respect and masculinity through a career, the culture in which they find themselves may promote values such as physical toughness that can result in elevated rates of crimes of violence (Kaufman et al. 2008). Other researchers have also provided evidence that exposure to discrimination increases the likelihood of criminal offenses (Brody et al., 2006; Burt, Simons, & Gibbons, 2012; Moon, Hays, & Blurton, 2009; Prelow et al., 2004; Shademani, 2012). Importantly, the pressures of prejudice and discrimination are predicted to have an effect on negative outcomes over and above the effects of socioeconomic status (Mirowsky & Ross, 1980).

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In addition to inequality and discrimination, research has also focused on the stress of acculturation as a potential cause of negative outcomes for Hispanic youth (e.g. Smart & Smart, 1995; Miller, 2012). The process of ethnic minorities adapting to the dominant culture might include forms of strain that white Americans will not face. Building on this argument, recent

research by Perez, Jennings, and Gover indicates that GST is generalizable to Hispanics through the incorporation of processes of acculturation (2012). Specifically, Perez et al. (2012) found that ethnic-specific strain measures increased the likelihood of violent delinquency, and these effects were conditional on the level of Hispanic concentration.

Inequality, discrimination, and acculturation associated with race and ethnicity are unique processes through which race and ethnicity are predicted to condition the impact of strain on delinquency. Their commonality, however, is that each process is predicted to work against minorities as compared to whites. Moreover, many of the same processes that increase strain for racial minority decrease their resources for coping with strain in a conventional fashion (Kaufman et al., 2008). Consequently, Jang and Lyons (2006) suggest that GST is of special relevance for racial minorities such as African Americans in the U.S. due to the higher levels of strain they experience. We will test this vulnerability hypothesis in our analysis. However, theoretical justification also exists to believe that minorities might be more resilient to strain in general, or more resilient to particular forms of strain. In the next section, we discuss this possibility.

Resilience

Little attention has been given in the criminological literature to cultural differences in the interpretation of strain and stressful events. However, stress researchers long ago asserted that susceptibility to stress varies with different cultural arrangements (Mirowsky & Ross, 1980). How this process works will vary based on the type of strain individuals face. For example, minorities experiencing economic hardship and discrimination may not be particularly vulnerable to any particular negative life event. They might, instead, take it in stride. Similarly, adolescents who witness violence or experience violence on a regular basis might not be

substantially impacted by a particular instance of assault. Rather, it might simply be accepted as a fact of life. The most interesting and substantial instances of minority resilience, however, might be related to the experience of harsh punishment.

In her review of cultural differences in the effects of corporal punishment, Jennifer Lansford describes culture as “a kind of filter that can ease or exacerbate the effects of corporal punishment on child behavior,” and suggests that “specific parenting practices may have different effects on children’s behavior, depending on the cultural contexts in which the parenting occurs” (2010, p. 89). We argue that these statements are important not only because the “filter” analogy is a useful way of thinking about the manner in which culture influences child reactions to techniques of discipline, but also because they highlight the fact that *culture can serve to make children more resilient or more vulnerable* to harsh techniques of punishment. We assert that the influence of cultural differences resulting from race/ethnicity will be most salient in regards to the interpretation of harsh punishment as “normative” or “abusive.”

As suggested by Rankin and Quane (2002) and Ferrari (2002), to properly interpret parenting behaviors as harsh or abusive, contextual factors must be considered. Specifically, cultural differences may dictate whether corporal punishment is a normative form of parenting. Research (Deater-Deckard et al., 1996) suggests that harsh physical punishment is more prevalent in African-American families than in European-American families. Moreover, as discussed in the introduction, survey research (Alvy, 1987) and the ethnographic research of Elijah Anderson provide evidence that blacks are more likely to view corporal punishment in a positive light as a tool for molding children into productive citizens. To the extent that youth raised in such a culture view corporal punishment in the context of a loving parent-child

relationship, this source of “strain” might actually reduce delinquency, not increase it. Lansford (2010) makes this point clear:

If corporal punishment is the norm within a given culture, then children may believe that their parents are using corporal punishment as a planned strategy that is in their best interests; this could serve as a buffer against the adverse effects of corporal punishment. If, however, corporal punishment is not the norm within a given cultural context, then children may believe that their parents are out of control and rejecting, which may exacerbate children’s maladjustment (p. 100).

Although African-American adolescents report higher rates of exposure to harsh punishment, research suggests that African-American parents are simultaneously high in nurturing behaviors (Ferrari, 2002). Consequently, these high levels of harsh corporal punishment might not produce deleterious outcomes because they are paired with techniques of parenting that are nurturing. Similarly, Deater-Deckard, Dodge, & Sorbring (2005) suggest that our theoretical emphasis should be on the meaning that the parent communicates during discipline. If the portrayed meaning is of warmth and caring, rather than rejecting, the actually physical element of punishment may be less relevant.

In other words, whereas the frustration of racial discrimination might cause adolescents to be more susceptible to strain, nurturing in black families and relative acceptance of corporal punishment among blacks might cause adolescents to be more resilient to strain, eliminating the negative impact predicted by Agnew (2001) and colleagues (Kaufman et al., 2008).

A note on Hispanics. Our review of the literature, with the exception of the role of acculturation, has focused more on whites and African Americans, primarily due to a lack of research on Hispanic parenting or from Hispanics being collapsed with other groups into a single

category of “minority.” Research on parenting and family processes for Hispanics has not only been limited, but has also produced inconsistent findings. For example, whereas some researchers describe Hispanic parents as warm, nurturing, egalitarian, and family-oriented, others described Hispanic parents as punitive and authoritarian (Cardona, Nicholson, & Fox, 2000). As a result, Martinez (1988) suggests that Hispanic parents should not be characterized by one dominant parenting style, as they demonstrate a variety of styles depending on factors such as acculturation, education, and income.

Research Hypotheses

Two characteristics of our data allow for tests of particularly interesting research hypotheses. First, the data contain multiple forms of strain that should vary in their subjective nature: negative life events, assault victimization, and harsh punishment. We predict that being assaulted is always perceived negatively, whereas some negative life events, such as failing a grade, might bring stress, relief, or both. Moreover, harsh punishment could be viewed positively in that it shows that parents care about their children, or negatively due to the resulting physical and emotional pain. Consequently, we suggest that being a victim of assault will be the most objective as a source of negative stimuli, negative life events will fall in the middle of the continuum, and harsh punishment has the most potential for being interpreted in a subjective manner. This research builds on Froggio and Agnew’s (2007) focus on “subjective” versus “objective” strains.

Second, a serious omission in the literature is an analysis of the impact of race/ethnicity as a conditioning factor on the *indirect* effect of strain on delinquency. In other words, the cultural and socioeconomic experiences of one’s racial/ethnic group might alter the likelihood that strain increases feelings of anger and negative emotions, and also might alter the likelihood

that anger and negative emotions increase one's involvement in juvenile delinquency. Previous research on GST has not addressed the conditioning role of race/ethnicity on the intervening role of negative emotionality.

Hypothesis 1: *Levels of exposure to strain will be higher for minorities than for whites.*

The difficulties of inequality, discrimination and acculturation, as well as greater cultural acceptance of corporal punishment provide evidence for this prediction.

Hypothesis 2a: *The direct and indirect impact of harsh punishment will be higher for African Americans as compared to whites and Hispanics.* This hypothesis reflects the vulnerability perspective of race/ethnicity and GST put forth by Agnew (Agnew, 1992; Agnew, 2001; Kaufman et al., 2008).

Hypothesis 2b: *The direct and indirect impact of harsh punishment will be lower for African Americans as compared to whites and Hispanics.* In contrast to Agnew's predictions, this hypothesis reflects the resilience perspective due to cultural differences in African-Americans use and support for corporal punishment.

Hypothesis 3a: *The direct and indirect impact of negative life events and victimization will be higher for minorities than for whites.* The vulnerability perspective suggests that both the direct effect of strain on delinquency, and the indirect of strain on delinquency via negative emotionality, will be stronger for minorities as compared to whites.

Hypothesis 3b: *The direct and indirect impact of negative life events and victimization will be higher for whites than for minorities.* The resilience perspective suggests that both the direct effect of strain on delinquency, and the indirect of strain on delinquency via negative emotionality, will be weaker for minorities as compared to whites. Because cultural variations in

approval and use of physical discipline are not applicable, we predict that sub-group differences for hypotheses 3a and 3b will be less than for hypotheses 2a and 2b.

Data

We analyze the National Survey of Adolescents in the United States, 1995 (NSA), a household probability sample of 4,023 male and female adolescents aged 12-17. Highly structured interviews were used to collect the sample data using Computer-Assisted Telephone Interviewing technology. Two steps were taken to assure that respondents answered the questions openly, honestly, and with a degree of privacy. First, the interviewer asked if the adolescent was in a situation that provided privacy and an opportunity to answer freely. If not, the interviewer offered to call back at another time when privacy was assured. Second, the interview was composed primarily of closed-ended questions that could be answered with a “yes” or “no” or other one-word response. Consequently, over 99% of the adolescents agreed to answer the most sensitive questions (Crouch et al., 2000).

This study may have potentially excluded adolescents residing in institutional settings, adolescents without a parent or guardian, or adolescents whose parents do not speak English or Spanish. According to the 1990 census, 5% of households do not have telephones. In addition, methodologists estimate that 2% of parents of adolescents from households with telephones do not speak English or Spanish (Kilpatrick & Saunders, 1995). Consequently, the sampling frame covers an estimated 93% of U.S. adolescents living in households.

The NSA data provides advantages for researchers examining GST in the context of race and ethnicity. First, the data includes a probability oversample of adolescents residing in central cities. This oversampling allows for a comparison of whites to both African-American and Hispanic sub-samples. Second, the data include a variety of forms of strain that may be more or

less racially invariant in their impact on delinquency. Finally, the NSA data allow for an examination of rarely examined racial differences in the *indirect* effects of strain on delinquency via the production of negative emotions.

Measures

Delinquency. The dependent variable for this study is self-reported, serious delinquent behavior. Delinquency is represented by a modified version of the index offenses scale from the National Youth Survey (Elliott & Huizinga, 1983). The scale captures only serious offenses, such as motor vehicle theft, breaking and entering, gang-fighting, strong-arm tactics, and assault. The scale is a summation of six items reflecting counts or frequencies in which the adolescents have committed the offense. The sum represents a total count of offenses across the six categories.³ A complete description of components of scales is included in the Appendix.

Strain. The three measures of strain adopted in this study are negative life events, harsh punishment, and being a victim of assault. The negative life events scale is composed of ten items reflecting events that occurred in the last year. Some examples of life events include a parent losing a job, the death of a close friend, or getting a failing grade on a report card. The alpha level for the negative life events scale is 0.550, but reliability analysis is generally not an appropriate strategy for life event scales because many such life events are assumed to be independent (Newcomb & Harlow, 1986; Thoits, 1983) Life event scales are generally presented as count scores, however, because researchers are interested in the cumulative impact of life events on the manifestations of stress (Agnew, 1992).

³ The highest possible value was truncated at 100 to avoid potential skewness by a few cases with large values for gang-fighting.

The measure of harsh punishment is a categorical variable reflecting physical actions taken against the adolescent by a parent or guardian as a form of punishment. This measure includes spankings that left marks, bruises, or welts. The measure also includes punishments that involved burning, cutting, or tying up the child. Agnew (1992) suggests that recent stressful events should be more influential than distant events. To reflect the influence of recency, a dummy variable is created to reflect the experience of harsh punishment in the last year. Although Agnew emphasizes the recency of strain, other research suggests that long-lasting abuse, such as a history of child abuse, is most likely to result in negative emotionality (Terr, 1991). Consequently, a second dummy variable reflects a history of harsh punishment that occurred more than one year ago.

The final measure of strain reflects being a victim of assault. Similar to the previous measure, one dummy variable reflects recent victimization, a second dummy variable reflects victimization more than one year ago, and the reference category is no history of victimization. The variables indicate whether an adolescent was a victim of physical assault, including being beaten up with fists, threatened with a weapon such as a gun or knife, or attacked with a gun or knife.⁴

Negative emotionality. Agnew (1992) theorizes that individually experienced strain increases the likelihood that adolescents will experience a range of negative emotions, and that anger is a central emotional reaction for testing GST. Negative emotions such as anger are of central importance for the production of delinquency, according to Agnew, because they increase an adolescent's level of felt injury, might create a desire for revenge against the source of the

⁴ Because this assault could be at the hands of a family member, there could be some overlap between the measures of harsh punishment and the measures of assault. However, an analysis of the data indicates that there is a fair degree of conceptual distinction. Of the 333 adolescents who report being a victim of harsh punishment, more than 50% (180 adolescents) report that they have never been assaulted.

strain, and have the potential to lower an adolescent's inhibitions, increasing the propensity for deviance. The current study will examine the intervening effects of a twenty-item scale reflecting negative emotions that are consistent with symptoms of post-traumatic stress disorder (PTSD).⁵

This measure has a number of strengths. First, it provides significantly more information than a single-item indicator of anger or a dichotomous variable reflecting a diagnosis of PTSD. Second, the scale includes an item reflecting heightened feelings of anger, which Agnew emphasizes as an important mediator of the direct effect of strain on delinquency.⁶ Third, a primary characteristic of PTSD is an individual's involuntary recollection of a stressor or stressors. In other words, the individual psychologically re-experiences the original trauma or victimization PTSD also produces arousal symptoms such as irritability, anger, hyper-alertness, fearfulness, and strong physiological reaction to trauma-related situations (Haapasalo & Pokela, 1999). As such, PTSD is an excellent indicator of negative emotionality that serves as a link between past strain and current delinquent involvement. In fact, psychologists have developed a "trauma," or "post-traumatic," model of violence in which traumatic experiences in childhood, result in short- and long-term post-traumatic symptoms, which can promote subsequent deviant behavior (Haapasalo & Pokela, 1999). Finally, empirical evidence shows that criminal victimization is linked to the experience of PTSD (Andrews et al., 2000; Berton & Stabb, 1996;

⁵ Symptom counts, rather than a diagnostic criteria (present/absence of disorder), are adopted for this study for both methodological and theoretical reasons. Methodologically, adopting a count of symptoms as a measure of negative emotionality, as opposed to a yes/no diagnosis, prevents the loss of a considerable amount of information that is available in the data. Theoretically, general strain theory predicts that higher levels of negative emotionality should increase participation in delinquent acts, but does not specify that a diagnosable disorder is the "tipping point" that will push adolescents into deviant adaptations.

⁶ The single-item indicator of anger is included in a scale of negative emotionality for a number of reasons. First, although the single-item indicator of anger could have been included in the models in the place of negative emotionality, Agnew (1992) describes anger as only one of many negative emotions that can link strain to delinquency, and a reliability analysis indicates that the inclusion of anger increases the overall alpha for the scale, suggesting that anger "scales" well with the other negative emotions. Finally, in his own empirical tests of GST, Agnew includes anger in his scale of negative emotionality, indicating that this practice is consistent with his theoretical conception of the role of anger and other negative emotions (see Agnew et al., 2002).

Freedy et al., 1994; Kilpatrick et al., 1987; McCloskey & Walker, 2000; Resnick et al., 1992; Resnick et al., 1993), family violence is predictive of PTSD (McCloskey & Walker, 2000; Riggs et al., 1992), negative life events are linked to PTSD (McCloskey & Walker, 2000), and PTSD serves as a mediator between experiences of victimization and subsequent deviance (Epstein et al., 1998).

Controls. The set of control variables represents measures of early deviance, social support, having witnessed violence, female-headed household, number of children in the household, delinquency friends/peer pressure, and demographic variables. The measure of “early deviance” indicates whether the adolescent began smoking or drinking regularly more than one year prior to the interview and is included as a proxy for individual differences in the propensity for deviant behavior. Early onset of delinquency is generally considered a strong predictor of continued and chronic offending (Gottfredson & Hirschi, 1990; Moffitt, 1993; Simons et al., 1994). A measure of social support represents whether or not the adolescent had someone (parent or otherwise) who they could count on or depend on throughout their childhood. Other researchers have identified social support as a significant mediating factor for delinquent behavior (Colvin, Cullen, & Vander Ven, 2002; Cullen, 1994). Witnessing violence is a five-item scale reflecting whether or not the adolescent has ever seen someone shot, stabbed, robbed, threatened with a knife, gun or other weapon, or seen someone beaten up such that they were badly hurt. Much prior research has linked exposure to violence with juvenile offending (Song, Singer, & Anglin, 1998; Schwartz & Proctor, 2000).⁷ Delinquent friends measures the extent of delinquent involvement of each adolescent’s group of friends. This variable was measured in two

⁷ Witnessing violence is sometimes operationalized as a measure of strain in its own right and is labeled “vicarious strain” by Agnew (2006). Do to the complexity of the relationships between race/ethnicity and strain however, we adopt this measure as a control variable and limit our analysis to experienced strains. An examination of racial differences in reactions to vicarious strain is fodder for future research.

steps. First, adolescents were asked if their friends participated in any of nine different delinquent activities. Second, the adolescents were asked how many of their friends suggested that they do something that was against the law, ranging from “none or very few of them” to “all of them.” These components were used to form the final measure of delinquent friends, which is the product of these two variables representing friends’ involvement in delinquency *and* the peer pressure that adolescents face as their friends encourage them to commit delinquent acts. This control variable reflects aspects of differential association theory and general research on the influence of delinquent peers on criminal offending (Agnew, 1991; Jensen, 1972; Warr, 1991).

The remaining measures are commonly utilized control variables related to social economic status or demographic characteristics. Family social economic status is captured via two control variables: household income and parental education. We control for the number of children in the household and include an indicator for female-headed households. The latter measure represents a caregiving situation with the mother alone, the mother with a relative (not a stepfather), or a single female guardian. We also control for sex, with female being the reference category, and age. Finally, we include an indicator for female-headed households.

Racial Categories. Consistent with procedures used in the collection of U.S. Census data (1990), adolescents’ racial/ethnic identification was assessed through the use of two questions. First, adolescents were asked if they were of Spanish/Hispanic origin. Next, adolescents were asked if they fell in the category of White/Caucasian, African-American (Black), Asian (Oriental), American Indian or Alaskan Native, or Pacific Islander. These two questions were used to classify individuals as “white” if they identified themselves as white/Caucasian, not of Hispanic origin, as black if they self-identified as African-American (Black), not of Hispanic origin, and Hispanic if they self-identified as being of Hispanic origin, regardless of the racial

category they chose. Individuals not falling into one of these three categories were excluded from the analysis. Descriptive statistics can be found in Table 1.

Methods

As the first step in our analysis, we use chi-square tests, ANOVA, and Scheffe post-hoc⁸ tests to examine differences in levels of the independent and dependent variables across categories of race/ethnicity. Our choice of multivariate methods is based on the form of our dependent variable which, as described above, is composed of six items capturing the number of times each adolescent was involved in acts of serious delinquency over the last twelve months. When summed, the scale represents a self-reported count of the number of index offenses committed by the adolescent in the last year. Although count variables are often treated as though they are continuous and are analyzed through the use of linear regression models, the use of ordinary least squares regression for count outcomes can result in inefficient, inconsistent, and biased parameter estimates (Long, 1997).

The simplest model for analyzing count outcomes is the Poisson regression model (Long, 1997). However, as is the case with many count variables, our dependent variable has a variance larger than its mean, a property known as *overdispersion*. In the presence of overdispersion, the estimates from Poisson regression models are consistent, but inefficient. Moreover, the standard errors from a Poisson model will be biased downward, producing spuriously large z-values and overestimated the significance of the independent variables (Long, 1997; Cameron & Trivedi, 1998).

⁸ An ANOVA detects statistically significant differences in means across groups, but finding a significant overall *F* does not mean that each of the group means is significantly different from all others. The Scheffe method is a conservative post-hoc test that allows the researcher to test any of the comparisons between particular groups to test for significant differences in means (Hays, 1994).

Levels of Exposure to Strain

Racial differences might be more apparent in the impact of the strain variables representing individuals who were victims of assaults that were unrelated to discipline and who faced numerous negative life events, because these relationships should be unaffected by cultural differences in the approval of corporal punishment. Regarding *levels* of victimization, Table 2 shows that blacks are more likely to report a history of being assaulted, but the differences across race are not significant ($p = 0.261$). More substantial racial differences are found in levels of recent victimization (within the last year). Both blacks and Hispanics report higher rates of victimization than whites, and these differences are significant ($p < 0.001$). In fact, 15.6% of blacks and 14.2% of Hispanics report being assaulted in the last year, compared to only 8.8% of whites. Table 3 indicates that exposure to negative life events also differs across race. Blacks are confronted by the highest rates of negative life events, followed by Hispanics, and then whites. An ANOVA addressing all three racial categories produces a significant F-test indicating that the mean of at least one category differs significantly from the others, and Scheffe Post Hoc tests⁹ comparing whites to both blacks and Hispanics indicate that whites experience significantly fewer negative life events than these ethno-racial minorities. Whites also experience lower levels of negative emotionality than blacks and report less involvement in serious delinquency than black adolescents. Thus, the first hypothesis is supported in relation to recent victimization and negative life events. However, it is not supported in relation to having a history of victimization and only partially supported for past harsh punishment or recent harsh punishment in that whites report lower levels of strain than blacks, but similar levels to Hispanics.

⁹ When an F-test from an ANOVA is significant, it is often substantively useful to examine mean differences between any of two groups, for example levels of delinquent involvement for blacks versus Hispanics. Post Hoc tests such as the Scheffe method are an appropriate statistical technique for these comparisons (for example, see Hays, 1994, p. 455-458).

Regression Diagnostics

Before running the negative binomial models, we performed regression diagnostics to test for the possibility of multicollinearity among the predictor variables. Specifically, we ran an ordinary least squares regression model that included all of the independent variables. We then produced the variance inflation factors using the VIF command in Stata. All of these variance inflation factors were less than four, indicating that multicollinearity is not a problem for the multivariate negative binomial models.

Some of the variables do not include full information for all respondents. Of greatest concern is missing data on household income for 224 subjects. The possibility exists that the substantive findings are unduly influenced by missing data, because this missing data on income may be related to particular values of other variables in the models. To address this concern, we ran one model predicting delinquency that included all of the measures of strain and the control variables and a second model that was identical, except the measure of family income was excluded. None of the substantive findings were altered with the exclusion of the income variable, so in all subsequent analyses, household income is included as a control variable.

Direct Effects

Negative binomial regression models examining the direct effects of strain on serious delinquency are presented in Table 4 for each racial sub-sample. Harsh punishment has no impact on delinquency for whites, but being a victim of assault and experiencing negative life events increases whites' participation in delinquent acts. A quite different picture emerges for the African-American youth. Reporting past harsh punishment occurring at least one year prior to the survey has a strong, positive impact on serious delinquency. None of the measures of assault victimization or negative life events increases delinquency for these adolescents. The Hispanic

model illustrates a third pattern. Whereas recent harsh punishment does not have a significant effect on the white or black adolescents, this source of strain has a strong *negative* effect on the serious delinquency of Hispanics. Recent victimization and negative life events influence whites and Hispanics in a similar fashion.

Z-tests assessing the equality of regression coefficients across racial categories provide formal tests of hypotheses 2a, 2b, 3a and 3b regarding direct effects. Results of these z-tests are found in the “Significant Differences” column in Table 4. Hypothesis 2a, predicting that the impact of harsh punishment will be stronger for minorities as compared to whites, is supported in only one instance: past harsh punishment is more likely to produce serious delinquency among the black sample as compared to the white adolescents ($z = 2.584$). In comparison, the contrasts between blacks and Hispanics and between Hispanics and whites do not reach statistical significance.

Comparisons across ethnicity for recent harsh punishment are particularly interesting. Although hypothesis 2b predicts a lower impact of harsh punishment for African-American youth, recent harsh punishment actually reduces delinquency for Hispanics, and the coefficient for the Hispanic sample is significantly less than that of whites or blacks. In the context of a Hispanic family, then, it appears that harsh punishment reduces delinquency. One possible explanation is that Hispanic adolescents may view harsh punishment as a normative aspect of parenting and not perceive the act as stressful. A second possibility is that the punishment is stressful, yet the fear of harsh punishment serves to counteract the possible criminogenic effect of this stress.

Significant differences are also found for the variable reflecting recent victimization from assault. Both whites and Hispanics are more likely than blacks to react in a deviant fashion when

assaulted. Consequently, being assaulted is a criminogenic event for the Hispanics and whites, but this form of victimization does not increase involvement in serious delinquency for blacks. The finding that recent victimization has a higher impact of serious delinquency for whites as compared to blacks provides partial support for hypothesis 3a. The effects of past victimization and negative life events are invariant across the ethnic categories, which fails to support either hypothesis 3a or 3b.

Indirect Effects

The indirect pathways of GST are of particular interest when considering race-specific models. If racial discrimination is seen as a particularly unjust and frustrating form of stress, then interpersonal strain may be much more likely to produce anger and other negative emotions among racial minorities. The models in Table 5 address these possibilities. Regarding the white sample, harsh punishment does not increase feelings of negative emotionality, but being assaulted or experiencing negative life events increases negative emotionality for these adolescents. The same pattern appears for the black sample. Interestingly, strain has little impact on negative emotionality for Hispanics, where only negative life events exert a significant effect.

Hypotheses regarding the first indirect relationship of GST, the impact of strain on negative emotionality, are formally compared through the z -tests. The results of these tests are found in the "Significant Differences" column of Table 5. Only one parameter estimate is found to differ across ethnicity: negative life events are more likely to produce negative emotions among white adolescents as compared to Hispanics. Regarding the impact of strain on negative emotions, then, hypotheses 2a, 2b, and 3a are not supported from these models and hypothesis 3b receives only minor support. Given the number of non-significant comparisons, however, the

safest conclusion is that race does not condition the overall relationship between strain and negative emotionality.

Of particular interest for GST is that the only form of strain that consistently increases negative emotions is the negative life event scale. In contrast, neither past nor recent harsh punishment has a significant impact on negative emotions for adolescents of any race.

The models in Table 6 present racial differences in the effect of negative emotionality on serious delinquency, the second indirect effect of GST. The coefficients are significant and almost identical for the white and black adolescents, but negative emotionality does not have a significant impact on deviance for the Hispanic youth.

In contrast to the prediction of our hypotheses, *z*-tests indicate that the impact of negative emotions on serious delinquency is invariant across race/ethnicity. Combined with the results from Table 4, we can conclude that race does not condition the indirect pathways between strain and delinquency for our sample.

The mediating effect of negative emotionality on the relationship between strain and serious delinquency is not large, but does reflect some interesting patterns across racial categories. For example, the coefficients for past and recent victimization are somewhat mediated for white and blacks, but are relatively unchanged for Hispanics. Conversely, the coefficients for past and recent harsh punishment are generally unchanged for blacks and whites, whereas the effect of recent harsh punishment on serious delinquency of Hispanics actually becomes more strongly negative with the inclusion of the measure of negative emotionality. The one consistent mediation effect for all racial categories is a small reduction in the impact on negative life events on serious delinquency.

Summary of Findings

The purpose of this empirical analysis is to search for significant differences in the direct and indirect effect of strain across racial categories. Whereas our first hypothesis predicting higher levels of exposure to strain among minority youth as compared to whites was supported, our hypotheses concerning racial differences in the direct and indirect effects of strain on delinquency received little support.

Regarding the direct effects of strain on serious delinquency, for whites, harsh punishment is unrelated to delinquency, but being a victim of assault and experiencing negative life events increases serious delinquency. In comparison, blacks are unaffected by negative life events or recent victimization of any type, but past harsh punishment occurring more than one year prior has a strong impact on serious delinquency. Finally, Hispanics are susceptible to recent assaults and negative life events, but recent harsh punishment has a strong, negative impact on their serious delinquency. Consequently, we do not find support for Elijah Anderson's assertion that corporal punishment keeps African-American youth "in-line," but this (or some similar process) appears to occur among Hispanic youth in our sample. Of additional interest is the difference in the effects, for whites and Hispanics, but not for blacks, of harsh punishment in the contexts of discipline as compared to other forms of victimization. For whites and Hispanics, anyway, the source of victimization and context of victimization is of strong importance in predicting delinquency.

Regarding indirect effects, strain appears more salient for producing negative emotionality for whites and blacks, as compared to Hispanics, but (with only one exception) the differences do not reach statistical significance. The impact of negative emotionality on serious

delinquency also seems least salient for Hispanics, but again the differences across race are not significant.

Discussion and Conclusion

Our research adds to a number of studies addressing the possibility that race might condition the theoretical pathways of general strain theory. The general patterns reported in our literature review suggested that whites were more susceptible to corporal punishment, but the impact of physical abuse was racially invariant. Our theoretical section, however, described processes whereby minority youth might be either more vulnerable or more resilient to a variety of forms of strain. Because our measure of harsh punishment seems to fall halfway between corporal punishment and physical abuse, it is difficult to generalize our findings to the literature. Rodriguez and Belshaw (2010) analyzed the same data and also examined the impact of victimization and harsh punishment for whites and Hispanics, finding that whites were generally more susceptible to strain. However, their neglect to develop separate measures of recent and past strain obscured the most fascinating findings of our study.

One assertion that we can make is that harsh punishment as operationalized in our study does not deter criminal behavior for African-American adolescents in the fashion described by Elijah Anderson and past harsh punishment seems to have exactly the opposite effect. For Hispanics, however, recent harsh punishment does deter serious delinquency. Although we do not have measures of parental warmth or cultural acceptance of corporal punishment, tentatively suggest that these theoretical mechanisms described as promoting resilience our theory section explain this deterrent effect. With the exception of this unique finding for Hispanics, our research indicates that harsh punishment does not deter serious delinquency for whites or blacks.

The effects of victimization and negative life events are not impacted by cultural norms related to parenting or discipline. Our findings resulting from these measures provide consistent patterns across blacks, whites, and Hispanics. Neither victimization nor negative life events increase the serious delinquency of blacks. In contrast, both victimization and negative life events increase the serious delinquency of whites. For Hispanics, recent victimization and negative life events increase serious delinquency, whereas past victimization does not. Regarding our hypotheses then, in comparing blacks and whites, the vulnerability hypotheses compatible with Agnew's GST are not supported, but the resilience hypotheses are supported. A possible explanation is that persistent hardships experienced by blacks makes them immune to negative effects from these types of strain. We see two clear implications for GST. First, victimization and negative life events might not be perceived as unjust, high in magnitude, associated with low social control, or produce an incentive to engage in criminal coping. Clearly additional research is needed to empirically evaluate this aspect of the theory. Second, our results clearly suggest that our measures of strain are subjective strains that are interpreted and acted-upon differently across race. Subsequent research on GST should continue to focus on the subjective versus objective nature of strains and the corresponding ramifications for the theoretical perspective.

A number of important implications flow logically from our research. First, should parents spare the rod or is it dangerous to do so? Our findings provide preliminary evidence that this question depends on the race/ethnicity of the youth. Without additional information as to whether Hispanic youth saw this punishment as unjust or stressful, interpretation is risky at best. Hispanics facing harsh punishment might find it stressful, yet be significantly frightened by the punishment such that they refrain from delinquency. On the other hand, Hispanic youth in our sample may simply view corporal punishment as a justified, normative aspect of parenting, and

not experience it as stressful at all. A more conclusive interpretation will rely on more adequate data on subjective perceptions of strain. Consequently, we are not suggesting that Hispanic parents, or any parents, adopt harsh techniques of discipline to prevent delinquency in their children.

Second, as the racial differences in different forms of victimization in our study suggest, tests of GST should continue to focus on the subjective interpretation of the experience of strain. However, our findings suggest that different measures of strain vary in their subjectivity across social/cultural categories such as race. According to our models, negative life events appear to be least subjective, the experience of harsh punishment is most subjective, and the experience of victimization falls in the middle.

Third, our study speaks to the classical debate between the relative importance of cultural and structural causes of crime. Similar to the conclusions of Heimer (1997), our research indicates that neither culture nor stratification provides a complete understanding of correlates and causes of crime. Regarding our research, stratification obviously influences the experience of strain, as evidenced by the differences in levels of experienced strain across racial/ethnic groups. However, culture is essential to the understanding of our research as well, as our results suggest that the manner in which youth experience and interpret some types of strain varies by race. Consequently, we suggest that future research on GST accounts for cultural differences in the subjective experience of strain.

Although our research highlights fascinating differences in the experiences of a variety of strain across racial categories, some limitations should be noted. First, although we are able to approximate appropriate causal orderings by distinguishing strain occurring simultaneous with delinquency and strain that occurred more than one year ago, the data is cross-sectional in nature.

Longitudinal data would allow for a closer approximation to true causal effects. Also, our data lacks subjective perceptions of the experiences of strain. As we have thoroughly noted, future research on GST should incorporate subjective assessments of occurrences of strain in order to development a more thorough and more useful understanding of the types of strain that are mostly likely to result in delinquency and the reasons why these types of strain are particularly criminogenic.

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Table 1. Descriptive Statistics

Variable	Mean (%)	SD	Min	Max
Dependent Variable:				
Serious delinquency	0.63	5.13	0	100
Strain Variables:				
Negative life events	2.20	1.77	0	10
Victimization (past)	.07	0.26	0	1
Victimization (recent)	.11	0.31	0	1
Harsh punishment (past)	.08	.26	0	1
Harsh punishment (recent)	.02	.13	0	1
Intervening Variable:				
Negative emotionality	1.73	2.96	0	18
Conditioning Variables:				
White	.72		0	1
Black	.15		0	1
Hispanic	.08		0	1
Control Variables:				
Household income	5.42	1.96	1	9
Parental education	5.99	1.47	1	9
Violent community	1.22	0.85	0	3
Witnessed violence	1.29	1.11	0	5
Delinquent friends	2.88	4.24	0	36
Age	14.48	1.70	12	17
Male	.51		0	1
Female-headed household	.21		0	1
Number of children	2.39	1.22	1	9
Social support	.91		0	1

Table 2. Descriptive Statistics and Chi-Square Tests for Categorical Strain Variables across Ethnicity

Variable	Whites %	Blacks %	Hispanics %	Chi-square	Level of Significance
Harsh pun. (past)	6.7	11.7	6.4	16.075	0.000
Harsh pun. (recent)	1.3	4.7	1.4	28.316	0.000
Victimization (past)	6.6	8.6	7.4	2.685	0.261
Victimization (recent)	8.8	15.6	14.2	25.934	0.000

NOTE: Sample size is 2536 whites, 514 Blacks, and 281 Hispanics

Table 3. Descriptive Statistics, ANOVA, and Scheffe Post-Hoc Tests for Negative Life Events, Negative Emotionality, and Delinquency across Ethnicity

Variable	Whites Mean (S.D.)	Blacks Mean (S.D.)	Hispanics Mean (S.D.)	Whites versus Blacks (l.o.s.)	Whites versus Hispanics (l.o.s.)
Negative life events*	1.975 (1.666)	2.848 (1.848)	2.437 (1.884)	0.000	0.000
Negative emotionality*	1.619 (2.865)	2.155 (3.467)	2.018 (3.211)	0.001	0.106
Delinquency*	0.417 (3.658)	1.095 (7.335)	1.021 (5.692)	0.010	0.114

* F-test for ANOVA is significant at $p < .05$

NOTE: Sample size is 2536 whites, 514 Blacks, and 281 Hispanics

Table 4. Negative Binomial Regression Coefficients Representing the Direct Effect of Strain on Serious Delinquency, Estimated separately by Ethnicity

	Whites		Blacks		Hispanics		Significant t Differences
	Coefficient (S.E.)		Coefficient (S.E.)		Coefficient (S.E.)		
Harsh punishment (past)	-0.273	(.263)	1.080	(.453)	0.033	(.504)	<i>a</i>
Harsh punishment (recent)	-0.285	(.410)	0.908	(.789)	-1.816*	(.521)	<i>b,c</i>
Victimization (past)	0.904*	(.295)	0.413	(.436)	0.443	(.481)	
Victimization (recent)	1.452*	(.278)	0.187	(.349)	1.578*	(.475)	<i>a,b</i>
Negative life events	0.228*	(.054)	0.162	(.085)	0.243*	(.088)	
Household income	-0.012	(.071)	0.131	(.081)	0.059	(.102)	
Parental education	-0.161*	(.076)	-0.077	(.118)	-0.167	(.100)	
Violent community	0.206	(.122)	0.061	(.174)	-0.127	(.212)	
Witnessed violence	0.295*	(.096)	0.432	(.121)	0.110	(.145)	
Delinquent friends	1.812*	(.164)	1.162	(.188)	1.707*	(.348)	
Age	-0.143*	(.067)	0.130	(.104)	-0.336*	(.124)	
Male	1.266*	(.208)	0.801	(.327)	0.991*	(.326)	
Female-headed household	-0.011	(.226)	0.534	(.291)	0.789*	(.370)	
Social support	0.666*	(.285)	-0.337	(.484)	-0.118	(.476)	
Children in household	-0.020	(.168)	0.264	(.321)	0.211	(.328)	
Early deviance	0.637*	(.234)	0.134	(.498)	1.684*	(.408)	
Constant	-3.721*	(1.094)	-7.519	(1.905)	-0.573	(1.893)	
Log-likelihood	-793.42		-319.43		-170.27		

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

NOTE: Differences in coefficients across racial categories calculated only for strain variables.

a: Coefficient for whites is significantly different from coefficient for blacks, $p < .05$ (two-tailed test)

b: Coefficient for whites is significantly different from coefficient for Hispanics, $p < .05$ (two-tailed test)

c: Coefficient for Hispanics is significantly different from coefficient for blacks, $p < .05$ (two-tailed test)

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Table 5. Negative Binomial Regression Coefficients Representing the Relationship between Strain and Negative Emotionality, Estimated separately by Ethnicity

	Whites		Blacks		Hispanics		Significant t Differences
	Coefficient (S.E.)		Coefficient (S.E.)		Coefficient (S.E.)		
Harsh punishment (past)	0.156	(.158)	0.264	(.173)	0.180	(.314)	
Harsh punishment (recent)	0.537	(.229)	0.508	(.283)	0.301	(.255)	
Victimization (past)	0.652*	(.126)	0.848*	(.214)	0.266	(.349)	
Victimization (recent)	0.401*	(.125)	0.664*	(.181)	0.350	(.243)	
Negative life events	0.235*	(.026)	0.158*	(.042)	0.117*	(.052)	<i>b</i>
Household income	-0.000	(.027)	0.035	(.035)	-0.070	(.046)	
Parental education	0.094*	(.033)	-0.005	(.056)	0.130	(.055)	
Violent community	0.050	(.053)	0.135	(.073)	0.083	(.097)	
Witnessed violence	0.116*	(.043)	0.179*	(.064)	0.138	(.087)	
Delinquent friends	0.478*	(.059)	0.476*	(.091)	0.573*	(.137)	
Age	0.067*	(.030)	0.077	(.048)	0.007	(.124)	
Male	-	(.088)	-	(.150)	-	(.170)	
	0.645*		0.629*		0.421*		
Female-headed household	0.056	(.089)	-0.107	(.156)	-0.165	(.197)	
Social support	-	(.153)	-0.296	(.198)	-0.285	(.168)	
	0.105*						
Children in household	-0.042	(.078)	-0.152	(.131)	-0.285	(.168)	
Early deviance	0.094	(.109)	-0.354	(.247)	0.152	(.223)	
Constant	-	(.483)	-1.879	(.758)	-0.518	(.914)	
	2.228*						
Log-likelihood	-3787.23		-861.36		-470.29		

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

NOTE: Differences in coefficients across racial categories calculated only for strain variables.

a: Coefficient for whites is significantly different from coefficient for blacks, $p < .05$ (two-tailed test)

b: Coefficient for whites is significantly different from coefficient for Hispanics, $p < .05$ (two-tailed test)

a: Coefficient for Hispanics is significantly different from coefficient for blacks, $p < .05$ (two-tailed test)

Table 6. Negative Binomial Regression Coefficients Representing the Relationship between Negative Emotionality and Serious Delinquency, Estimated separately by Ethnicity

	Whites		Blacks		Hispanics	
	Coefficient (S.E.)		Coefficient (S.E.)		Coefficient (S.E.)	
Harsh punishment (past)	-0.286	(.267)	1.090*	(.494)	-0.032	(.483)
Harsh punishment (recent)	-0.316	(.433)	0.847	(.714)	-2.185*	(.641)
Victimization (past)	0.742*	(.282)	0.241	(.421)	0.555	(.481)
Victimization (recent)	1.276*	(.274)	-0.061	(.342)	1.511*	(.490)
Negative life events	0.187*	(.054)	0.136	(.084)	0.207*	(.083)
Negative emotionality	0.092*	(.026)	0.091*	(.033)	0.063	(.043)
Household income	-0.040	(.071)	0.079	(.082)	0.060	(.102)
Parental education	-0.161*	(.074)	-0.016	(.120)	-0.168	(.099)
Violent community	0.207	(.123)	0.030	(.162)	-0.112	(.212)
Witnessed violence	0.252*	(.100)	0.377*	(.122)	0.091	(.141)
Delinquent friends	1.742*	(.171)	1.045*	(.198)	1.639*	(.341)
Age	-0.113	(.068)	0.118	(.102)	-0.338*	(.125)
Male	1.529*	(.220)	0.883*	(.326)	1.005*	(.322)
Female-headed household	0.071	(.227)	0.501	(.271)	0.882*	(.378)
Social support	-0.581*	(.287)	-0.263	(.465)	-0.101	(.504)
Children in household	-0.067	(.171)	0.320	(.317)	0.343	(.348)
Early deviance	0.560*	(.232)	0.096	(.481)	1.633*	(.405)
Constant	-4.140*	(1.118)	-7.371	(1.865)	-0.631	(1.890)
Log-likelihood	-793.42		-316.11		-169.60	

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

Appendix: Description of Scale Components

Serious Delinquency (6-item scale, $\alpha = 0.646$)

How many times in the past 12 months have you:

- Stolen or tried to steal something worth more than \$100?
- Stolen or tried to steal a motor vehicle such as a car or motorcycle?
- Broken or tried to break into a building or vehicle to steal something or just look around?
- Been involved in gang fights?
- Used force or strongarm methods to get money or things from people?
- Attacked someone with the idea of seriously hurting or killing that person?

Negative Life Events (alpha = 0.550)

Which of these events happened to you during the last year?

- Serious illness or injury of a family member
- Mother/father lost a job
- Death of a family member
- Death of a close friend
- Serious illness or injury of a close friend
- Losing a close friend
- Having to repeat a school grade
- Major personal illness or injury
- Being suspended from school
- Getting at least one failing grade on a report card

Harsh Punishment

The adolescent answered yes to one or more of the following questions: *Families have different ways of punishing young people if they think they have done something wrong. Some families spank young people as a form of punishment.*

- Has a parent or some adult in charge of you ever spanked you so hard that you had to see a doctor because you were hurt so bad?
- Not counting any spanking incidents you have already told me about, has a parent or someone in charge of you ever spanked you so hard that you got bad marks, bruises, cuts or welts?
- Not counting any spanking incidents you already told me about, has a parent or someone in charge of you ever punished you by burning you, cutting you, or tying you up?

Victimization

Sometimes young people get hit, beat up or physically assaulted by another person. The person who hits, attacks, or beats up a young person isn't always a stranger, but can be someone who the young person knows well, even a family member or friend. The person doing the hitting can be older than the young person, about the same age, or even younger than the young person. Young people tell us they sometimes get hit, attacked, or beat up at school, in their neighborhood, or even at home. These types of attacks can even happen to small children sometimes. Many times, young people never tell anyone about these events.

- Has anyone – including family members or friends – ever attacked you with a gun, knife, or some other weapon, regardless of when it happened or whether you ever reported it to the police?
- Not including incidents you already told me about, has anyone – including family members or friends – ever physically attacked you without a weapon, but you thought they were trying to kill you or seriously injure you?
- Not including incidents you already told me about, has anyone – including family members or friends – ever threatened you with a gun or knife, but didn't actually shoot or cut you?
- Not including incidents you already told me about, has anyone – including family members or friends – ever beat you up, attacked you, or hit you with something like a stick, club, or bottle so hard that you were hurt pretty bad?
- Not including incidents you already told me about, has anyone – including family members or friends – ever beat you up with their fists so hard that you were hurt pretty bad?

Negative Emotionality (alpha = 0.867)

Within the last 6 months, have you:

- Had trouble concentrating or keeping your mind on what you were doing, even when you tried to concentrate?
- Lost interest in activities which usually meant a lot to you?
- Felt you had to stay on guard much of the time?
- Deliberately tried very hard not to think about something that had happened to you?
- Had difficulty falling asleep or staying asleep?
- Stopped caring about activities in your life that used to be important to you?
- Unexpected noises startled you more than usual?
- Kept having unpleasant memories, or seeing them in you mind?
- Had repeated bad dreams or nightmares
- Went out of your way to avoid certain places or activities which might remind you of something that happened to you in the past
- Deliberately tried to avoid having any feelings about something that happened to you in the past?
- Felt cut off from other people or found it difficult to feel close to people?
- Could not feel things anymore or that you had much less emotion than you used to?
- Found yourself suddenly feeling very anxious, fearful, or panicky?
- Little things bothered you a lot or could make you very angry?
- Had disturbing memories that kept coming into your mind whether you wanted to think of them or not?
- Felt a lot worse when you were in a situation that reminded you of something that had happened in the past?
- Found yourself reacting physically to things that reminded you of something that had happened in the past?
- The way you think about or plan for the future was changed by something that happened to you in the past?

- Had a “flashback” – that is, have you had an experience in which you imagined that something that happened in the past was happening all over again?

Household Income

Before taxes and other payroll deductions, would you say that the total 1994 income of all members of your household was: (from parent questionnaire)

- Less than \$5,000 = 1
- \$5,000 to \$10,000 = 2
- \$10,000 to \$20,000 = 3
- \$20,000 to \$30,000 = 4
- \$30,000 to \$40,000 = 5
- \$40,000 to \$50,000 = 6
- \$50,000 to \$75,000 = 7
- \$75,000 to \$100,000 = 8
- More than \$100,000 = 9

Parental Education

What is the highest grade or year of school that (you/head of household) completed?

- No formal schooling = 1
- First through 7th grade = 2
- 8th grade = 3
- Some high school = 4
- High school graduate = 5
- Some college = 6
- Four year college grad. = 7
- Some graduate school = 8
- Graduate degree = 9

Community Violence

How much of a problem is violence in your community?

- Not a problem at all = 0
- A fairly small problem = 1
- A middle sized problem = 2
- A very big problem = 3

Note: Parents of the adolescents were also asked this question on violence in the community. The response of the parent was substituted for the 28 adolescents whose response was “don’t know.”

Witnessed Violence (5-item scale, alpha = 0.607)

Some young people tell us they have seen one person violently attack another person. By seeing a violent attack, we mean when you have actually seen someone beat up, rob, sexually assault, cut or stab with a knife, shoot at, actually shoot, or even kill another person. The people involved in the attack may have been strangers, friends, neighbors, or even family members. We would like to find out about any violent attacks you have actually seen, whether it happened at school, in your neighborhood, somewhere else, or

even in your home. We mean seeing violent attacks in real life, not on TV or in movies.

- Have you ever seen someone actually shoot someone else with a gun?
- (Not counting any incidents you already told me about,) have you ever seen someone actually cut or stab someone else with a knife?
- (Not counting any incidents you already told me about,) have you ever seen someone being mugged or robbed?
- (Not counting any incidents you already told me about,) have you ever seen someone threaten someone else with a knife, a gun, or some other weapon?
- (Not counting any incidents you already told me about,) have you ever seen someone beaten up, hit, punched, or kicked such that they were hurt pretty badly?

Delinquent Friends

Component A:

Have your friends ever:

- Purposely damaged or destroyed property that did not belong to them?
- Used marijuana or hashish?
- Stolen something worth less than \$5?
- Hit or threatened to hit someone without any reason?
- Broken into a vehicle or a building to steal something?
- Sold hard drugs such as heroin, cocaine, and LSD?
- Stolen something worth more than \$50?
- Gotten drunk once in awhile?
- Sold or given alcohol to kids under 18?

Component B:

Have your friends ever suggested you do something that was against the law?

- None of them or very few of them = 1
- Some of them = 2
- Most of them = 3
- All of them = 4

Note: Variable used in the analysis is the product of components A and B.