

Gender Differences in Strain, Negative Emotions, and Coping Behaviors: A General Strain Theory Approach

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This paper empirically evaluates Broidy and Agnew's propositions, in which they apply general strain theory to explain gender differences in crime and deviance, by analyzing data from a national survey of adult African Americans. First, African American women were more likely to report strains related to physical health, interpersonal relations, gender roles in the family, and less likely to mention work-related, racial as well as job strain than African American men. Second, African American women were less likely than African American men to turn to deviant coping strategies when they experienced strain partly because their strains were more likely to generate self-directed emotions, such as depression and anxiety, which in turn were less likely to lead to deviant coping behaviors than other-directed, angry emotion. Finally, it was found that the self-directed emotions were more likely to result in nondeviant, legitimate coping behaviors than other-directed emotion, anger.

Keywords strain; coping behaviors; gender differences; negative emotions

To explain the higher rate of crime among men than women using Agnew's (1992) general strain theory (GST), Broidy and Agnew (1997) advanced three propositions, since GST in its original form does not provide an immediate explanation. Specifically, GST posits that strain generates negative emotions that provide motivation for criminal acts as a behavioral coping strategy

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because such emotional distress creates pressure for corrective action. Thus, the more distressed an individual gets, the more likely it is for the individual to engage in crime. According to this basic proposition of GST, given that women are, on average, more distressed than men (Aneshensel, 1992; Mirowsky & Ross, 1989; Pearlin, 1989), women are supposed to commit more crime than men, but we have known for a long time that the opposite is true (Gottfredson & Hirschi, 1990; Harris, 1977; Lombroso & Ferrero, 1910; Smith & Visher, 1980).

In their propositions Broidy and Agnew state that men and women are different not only in the rate but also in the forms of crime they commit because they differ in the types of strain they tend to experience, emotional responses to strain, and factors conditioning the use of criminal versus noncriminal adaptations of strain and distress. In essence, they first propose that women are at least as strained and thus distressed as men but commit less crime because they are less likely than men to have criminogenic strain and emotional response to strain. Second, when women respond to strain with crime and deviance, they tend to engage in an act consistent with their emotional responses to strain, thereby making women's behavioral responses to strain different from men's. Finally, women are less likely to respond to a given level of strain or emotional distress with crime and deviance, and more likely to use legitimate coping strategies in response to strain and distress than men.

These propositions, however, have not been fully examined yet. Thus, the present study is intended to examine this understudied research topic. Specifically, it is hypothesized that men tend to experience types of strain that are likely to lead them to feel other-directed emotions (e.g., anger) in response to strain, which in turn cause them to engage in other-directed forms of deviant acts (e.g., interpersonal aggression). On the other hand, women's strains are likely to generate self-directed emotions (e.g., depression and anxiety) that tend to lead to self-directed deviant (e.g., drug use) or nondeviant, legitimate coping behaviors (e.g., ignoring the problem or religious coping). Also, women are less likely to respond to strain and emotional distress with deviant coping than men because of gender differences in conditioning factors, such as self-esteem and self-efficacy.

To test these hypotheses, the present study analyzes data from a national survey of African American adults, which is a potential contribution of this study to the current literature on GST and gender, given that previous researchers mostly used data collected from predominantly White samples of adolescents or college students. It is important to study African Americans because they tend to report higher average levels of strain, emotional distress, and deviant acts including violent crime than other ethnic groups (Mirowsky & Ross, 1986, 1989; Sampson & Lauritsen, 1997). The present focus on religious coping as legitimate coping strategy is also important, given the relatively high levels of religious involvement and frequent use of religious coping among African Americans (Sherkat & Ellison, 1999).

General Strain Theory and Gender

Agnew's (1992) general strain theory conceptualizes strain broadly in terms of three ideal types—strain as the actual or anticipated failure to achieve positively valued goals, strain as the actual or anticipated removal of positively valued stimuli from the individual, and strain as the actual or anticipated presentation of negative stimuli—unlike classic theories of strain that focused partly on one of the three types (Cloward & Ohlin, 1960; Cohen, 1955; Merton, 1938). Also, Agnew (2001) makes a distinction between objective and subjective strains. While they both refer to events or conditions that are disliked by people, the difference is that the former are those “disliked by most members of a given group” (p. 320), whereas the latter are those “disliked by people who are experiencing (or have experienced) them” (p. 321). This conceptual distinction is important, given that individuals often differ in their subjective evaluation of the same objective strains.

According to GST, strain generates negative emotions that provide motivation for deviant acts, including crime, as a coping strategy. Specifically, Agnew distinguishes between two types of emotional responses to strain, self-directed (e.g., depression) and other-directed emotions (e.g., anger), suggesting that the latter are more likely to result in other-directed deviant acts, such as interpersonal aggression and violence, rather than self-directed acts like drug use. Further, to explain why not all strained individuals turn to deviance and crime to adapt to strain, Agnew proposes that an individual's internal and external factors increase (or decrease) the probability of choosing legitimate over a deviant or criminal coping strategy.

In applying GST to explain the higher rate of crime among males than females, based on their extensive review of literatures, Broidy and Agnew (1997) first concluded that GST cannot explain the gender differences in crime by simply arguing that men experience more strain and distress than women because the literatures show otherwise. Then they advanced three propositions as GST explanations of gender differences in crime and deviance.

First, Broidy and Agnew focus on gender differences in the ideal types of strain, beginning with the first type, that is, gender differences in positively valued goals. Specifically, males are more concerned with material success, extrinsic achievements, and distributive justice, whereas females are more concerned with interpersonal relations, meaning/purpose in life, and procedural justice. As a result, males are more likely to have financial and work-related strains, whereas females are more likely to experience interpersonal or relational strain. Broidy and Agnew also note gender differences in the second and third types of strain: that is, females are more likely to have strains related to gender discrimination and gender roles at work or home, whereas males are more likely to experience the strain of criminal victimization and interpersonal conflicts due to competitive relations with peers. Then they propose that male strains are more conducive to confrontational, other-directed deviance and crime (e.g., interpersonal aggression and violence) compared to female strains

that are more conducive to self-directed or self-destructive forms of deviant acts (e.g., eating disorders and drug use) and nondeviant, escape-avoidance tactics (e.g., selective ignoring).

In addition, while Broidy and Agnew did not include in their discussion of gender differences in types of strain, Agnew (1992) suggested that nonsocial strain, such as illness, should be investigated, implying that it is likely to lead to self-directed rather than other-directed deviance and crime given that illness "is unlikely to generate anger" (p. 75) but rather likely to result in self-directed emotions, such as depression and anxiety. The health literature shows that women tend to have poorer physical health than men in terms of disease, functional limitations, self-rated health, and perceived health status (Johnson & Wolinsky, 1993; Kessler, 1982; Ross & Wu, 1995; Williams, 1990).

Second, Broidy and Agnew suggest that gender differences in the emotional response to strain help explain gender differences in deviant coping behavioral response to strain. Of special relevance here are Agnew's conceptual distinction between other- and self-directed emotions and their systematic relationships with other- and self-directed deviance and crime. That is, other-directed, angry emotions tend to have stronger effects on confrontational, other-directed than self-directed deviance and crime, whereas self-directed emotions, such as depression and anxiety, tend to have larger effects on self- than other-directed deviance and crime. While the gendered-response thesis postulates that men and women respond to strain with different emotions (i.e., men get angry and hostile, whereas women feel anxious and depressed), prior research provides only limited support for the thesis. In fact, it was found that women report higher levels of anger as well as depression and anxiety than men, controlling for gender differences in emotional expressiveness (Mirowsky & Ross, 1995). Then how could we explain the observation that women tend to report higher levels of anger but are more likely than men to engage in self-directed behaviors in response to strain?

According to Broidy and Agnew, the gender and distress literature suggests that the anger women experience is different from that experienced by men in that the anger of women is typically accompanied by emotions such as fear, anxiety, guilt, and shame, whereas the anger of men is characterized by moral outrage. The former is consistent with the previous finding that women tend to report higher levels of depression and guilt than men regardless of whether they report higher or the same levels of anger compared to men (Broidy, 2001; Hay, 2003; Jang & Johnson, 2005; Piquero & Sealock, 2004; Van Gundy, 2002). Implied here is that women's anger is likely to be mitigated by its concurrent nonangry emotions, and thus less likely than men's anger to be expressed in other-directed forms of crime and deviance. Also, it has been suggested that women tend to internalize their anger, unlike men who tend to externalize it (Broidy & Agnew, 1997). This is partly because women are socialized to turn their anger inward and blame themselves for adversity (which GST posits to decrease the probability of engaging in other-directed deviance and crime), whereas men are socialized to outwardly express their anger. In addition,

women tend to worry more than men that their anger might hurt others and jeopardize valued relationships, which would be inconsistent with their nurturing and supportive roles.

Finally, Broidy and Agnew focus on gender differences in various factors that condition the relationship between strain/distress and crime, which GST proposes as an explanation of why people differ in types of strain/distress adaptation: that is, some turn to deviance and crime, whereas others employ legitimate coping strategies. According to their review of the stress literature, females are not necessarily advantaged over males in terms of conditioning factors that are less likely to have people respond to strain and emotional distress with crime and deviance, such as self-esteem and self-efficacy. These factors, however, coupled with gender role socialization, gender stereotypes, and gender identities, may be more likely to lead women than men to employ certain types of deviant coping strategies. For example, women low in self-esteem and self-efficacy relative to men, not feeling secure or confident, may be more likely to employ self-directed, non-criminal or ineffective coping strategies (e.g., alcohol abuse or selective ignoring) rather than criminal, confrontational ones that would be inconsistent with their gender roles and stereotypes.

Also, although they are higher in emotional social support than males, "females who are more strongly invested in their intimate networks may try to avoid serious criminal behaviors that would threaten these ties" and thus "may opt, instead, for various self-focused, nonconfrontational illegitimate coping strategies—like drug use" (Broidy & Agnew, 1997, p. 284). In other words, while women with social support are likely to employ legitimate coping strategies, if they end up using illegitimate ones, they are likely to engage in self-directed, ineffective, deviant coping behaviors, such as alcohol or drug use. In addition, women are more religiously involved and more deeply embedded in religious networks of social support than men (Ellison & Taylor, 1996; Jang & Johnson, 2003; Sherkat & Ellison, 1999), and thus more likely to use legitimate strategies and avoid confrontational illegitimate coping behaviors than men.

In sum, these factors are more likely to condition the effects of emotional responses to strain on coping behaviors among women than men—relationships to be examined in terms of three-way interactions involving gender, negative emotion, and conditioning factor. Specifically, first, the conditioning factors are more likely to *enhance* the positive effects of negative emotions on self-directed, nondeviant or legitimate coping behaviors among women than men. If gender is coded to represent being female (i.e., 0 = male, 1 = female), positive, three-way interactions would provide empirical support for these relationships. On the other hand, the conditioning factors are more likely to *weaken* the positive effects of negative emotions on other-directed, deviant coping behaviors among women than men, so negative, three-way interactions are expected.

However, the role that conditioning factors play for self-directed, deviant coping behavior (e.g., drug use), is less predictable than for the above coping behaviors given that those factors are expected to increase the likelihood of self-directed coping strategies but decrease that of deviant strategies. This

study proposes that they are likely to *weaken* rather than enhance the positive effects of negative emotions on self-directed, deviant coping behaviors based on GST: that is, conditioning factors of conventionality (which all the factors studied here are) are likely to lead people to respond to strain and emotional distress with nondeviant, conventional coping strategies. Thus, negative interactions are expected for self-directed, deviant coping behavior.

African Americans, GST, and Gender

GST is a general theory for all ethnic groups, but is of special relevance to African Americans who experience higher levels of strain due to racism, economic disadvantage, criminal victimization, and poor health, and thus are more distressed than other groups, especially Whites (Hagan & Peterson, 1995; Mirowsky & Ross, 1989; Paschall & Hubbard, 1998; Rankin & Quane, 2000; Ross & Van Willigen, 1996; Ross & Wu 1995; Schulz et al., 2000). Also important is how Broidy and Agnew's propositions apply to gender differences among African Americans. First, while gender differences in types of strain discussed above are likely to apply to African Americans, some of those male strains might be experienced by African American women as often as African American men, if not more, due partly to role strain unique to themselves within the areas of economic concerns, household maintenance, pregnancy, and parenting (Taylor, Chatters, Tucker, & Lewis, 1991). Broidy and Agnew (1997, p. 280) also pointed out that "females have come to experience increased levels of financial strain in recent years," which is likely to be especially true of African American women given their greater vulnerability to economic stress and chronic poverty than other women (Ennis, Hobfoll, & Schroder, 2000).

Second, Broidy and Agnew's discussion of gender differences in the emotional response to strain would also apply to African Americans: that is, African American women are likely to experience higher levels of other-directed (i.e., anger) as well as self-directed emotions (i.e., depression and anxiety) in response to strain than African American men. This may be partly because African American women are less likely to internalize anger than their White counterparts (Broidy & Agnew, 1997).

Finally, the present study will focus on self-esteem, self-efficacy, social support, and religiosity as conditioning factors. While all of these conditioning factors are expected to apply to African Americans (Ennis et al., 2000), religiosity is especially relevant to African Americans given this ethnic group's higher levels of religious involvement than Whites and the symbolic centrality that religious institutions, especially Black churches, occupy within African American communities (Ellison, 1993; Sherkat & Ellison, 1999). Directly relevant to the present study is that African American women are not only more involved in religious networks as well as activities (including service attendance) than African American men, but also more likely to use religious coping (Connell & Gibson, 1997; Ellison, 1993; Sherkat & Ellison, 1999).

Hypotheses

Taken together, Broidy and Agnew (1997) and the above studies suggest the following:

- H1: African American women are more likely to have strains related to physical health, interpersonal relations, and gender roles in the family (called here female strains) and less likely to experience strains related to finance, job, racial discrimination at work, and criminal victimization (called here male strains) than African American men.
- H2: Female strains are more likely to lead to self-directed (i.e., depression and anxiety) than other-directed emotions (i.e., anger), whereas male strains are more likely to generate other-directed than self-directed emotions.
- H3: Self-directed emotions are more likely to lead to self-directed, deviant (e.g., drug use) and nondeviant, legitimate coping behaviors (e.g., ignoring a problem, praying) than other-directed emotions, whereas other-directed emotions are more likely to result in other-directed, deviant coping behavior (e.g., fighting) than self-directed emotions.
- H4: Self-esteem, self-efficacy, social support, and religiosity are more likely to enhance the positive effects of negative emotional responses to strain on self-directed, nondeviant or legitimate coping behaviors (i.e., positive, three-way interaction effects), and weaken the effects on deviant coping behaviors, whether self- or other-directed, among women than men (i.e., negative, three-way interaction effects).

Prior Research

The present study is intended to examine whether different types of strains, specifically, male and female strains, explain gender differences among African Americans in the forms of legitimate as well as deviant behavioral responses to strain as a result of different emotional responses to strain between males and females. Previous researchers of GST and gender mostly studied a different issue, that is, whether the theory is applicable to both males and females (Agnew & Brezina, 1997), either by examining interactions between gender and GST variables or by focusing on typically female deviance, like purging behavior (Funk, 1999; Hoffmann & Cerbone, 1999; Hoffmann & Su, 1997, 1998; Mazerolle, 1998; Piquero & Sealock, 2004; Sharp, Terling-Watt, Atkins, & Gilliam, 2001; Van Gundy, 2002). However, they report findings relevant to this study's hypotheses.

First, prior research shows some evidence of significant gender differences in types of strain. For example, examining different types of "family strain," Hay (2003) found that male high school students were more likely than their female counterparts to report the perception of parental reaction to deviance with physical punishment, which tends to be male strain given that such perception indicates the likelihood of becoming "the targets of others' aggression and anger" (Broidy & Agnew, 1997, p. 280). Agnew and Brezina's (1997) and Mazerolle's (1998) studies show that adolescent boys are more likely than girls to report

negative relations with adults (parents and teachers) and poor peer relations of a nonromantic nature. These findings are consistent with Broidy and Agnew's (1997) observation that males are more likely than females to experience conflict with others, including peers, because of the competitive nature of their interpersonal relations. However, previous researchers, who focus mostly on the frequency or amount of strain, have rarely examined the various types of strain Broidy and Agnew (1997) discussed in terms of male versus female strains.

Second, regarding the relationships between types of strains (i.e., male versus female strains) and emotional responses to strain, Broidy's (2001) research provides some evidence relevant to the present study. Specifically, she estimated the effects of three measures of strain on anger and other negative emotions in response to the strain: two for strain as the failure to achieve positively valued goals, called "blocked goals" (perceived lack of success in reaching goals in various areas) and "unfair outcomes" (perceived unfairness of outcomes concerning their goals in each area), and one for strain as the loss of positively valued stimuli and presentation of negative stimuli, called "stress" (stressful life events). The first two measures tap male strain given that they mostly have to do with material success, extrinsic achievements, and the fairness of outcome (Broidy & Agnew, 1997), whereas the third measure tends to be gender-neutral. Broidy found that "unfair outcomes" had positive effects on anger but nonsignificant effects on nonangry emotions, while "blocked goals" had negative, instead of positive, effects on anger and no significant effect on nonangry emotions. On the other hand, the gender-neutral strain, "stress," had positive effects on both types of emotions, consistent with Broidy and Agnew's proposition. Baron (2004) and Hay (2003) also report that male strain—male family strain (see above) and violent victimization, respectively—has positive effects on anger.¹

Regarding the relationships between the two different types of emotional and behavioral responses to strain, Jang and Johnson (2003) found that self-directed emotions (i.e., depression and anxiety) had larger positive effects on self-directed (i.e., drug use) than other-directed deviant coping (i.e., interpersonal aggression), and other-directed emotions (i.e., anger) had larger effects on other-directed than self-directed deviant coping. Similarly, Piquero and Sealock (2000) found that anger had positive effects on interpersonal aggression, but depression had no significant effect. Broidy (2001), on the other hand, reports that a self-directed emotional response to strain has negative, not positive, effects on mostly other-directed criminal behavior.

Third, previous research generally provides limited support for self-efficacy, self-esteem, social support, and religiosity as conditioning factors (Agnew, Brezina, Wright, & Cullen, 2002; Agnew & White, 1992; Aseltine, Gore, & Gordon, 2000; Jang & Johnson, 2003; Jang & Lyons, 2006; Mazerolle, Burton, Cullen,

1. In addition, estimating the effects of family strain on guilt as well as anger separately for males and females, Hay found that the male strain was less likely to generate guilt, self-directed emotion, for males than females, whereas it was equally likely to generate anger for both gender groups.

Evans, & Payne, 2000; Mazerolle & Maahs, 2000; Paternoster & Mazerolle, 1994; Piquero & Sealock, 2000). While a recent study found that the distress-buffering effects of religiosity tend to be larger for women than men (Jang & Johnson, 2005), little research has been conducted to examine directly whether conditioning factors help explain gender differences in coping behaviors as Broidy and Agnew (1997) proposed.

Finally, GST researchers have not examined legitimate coping behavior as often as criminal and deviant coping, so relationships between GST variables, especially negative emotions and nondeviant, legitimate coping behavior have been rarely studied. One exception is Broidy (2001), who examined the effects of both types of emotions on a legitimate coping scale, constructed using items asking respondents about how often they would rely on three types of conventional coping strategies—cognitive, behavioral, and emotional—when faced with blocked goals and stressful life events. As expected, she found that nonangry, self-directed negative emotions had positive effects on legitimate coping, whereas other-directed emotions (i.e., anger), which had positive effects on illegitimate coping, had no significant effects on legitimate coping. Similarly, Jang and Lyons (2006) found that self-directed emotions, depression and anxiety, have stronger effects on withdrawing behavior in response to strain (i.e., not wanting to see or talk with anyone) than other-directed emotion, anger. Although religious coping (e.g., praying) is another common form of legitimate coping (Pargament, 1997), it has not been studied yet in the context of GST.²

In sum, previous researchers have, at best, understudied not only gender differences in types of strain but also the relationships between male and female strains, on the one hand, and self- and other-directed emotional responses to strain, on the other. In addition, there exists little research testing whether conditioning factors help explain gender differences in types of coping behaviors in response to strain and its resultant emotional distress. This study is intended to fill these gaps in the current literature on GST and gender.

Methods

Data

The data to test the present hypotheses come from the first wave of the National Survey of Black Americans (NSBA) that studied a nationally representative sample of adult African Americans. A multistage area probability sampling was conducted based on the national distribution of African Americans indicated in the 1970 Census. Every African American household in the continental United States had the same probability of being selected, and among eligible

2. However, previous researchers found that religiosity and spiritual coping have negative effects on criminal and deviant coping behavior: that is, those who are religious and/or employ spiritual coping are less likely to use crime and deviance as coping strategy (Jang & Johnson, 2003; Piquero & Sealock, 2000).

respondents (18 years of age or older, self-identified Black, and US citizens) of each selected household, one person was randomly chosen for a face-to-face interview (see Jackson, 1991, for a detailed description of the NSBA). For the initial wave of the survey, a total of 2,107 respondents were interviewed in 1979 and 1980, with a response rate of 67 percent. Although this rate is relatively low (due partly to the African Americans' residential concentration within urban areas), Jackson (1991, p. 25) reports, "Overall, the national sample is fairly representative of the Black population as reported by the 1980 Census," despite a slight tendency to overrepresent older women, low-income groups, and southern residents. Specifically, respondents in the initial sample are, on average, 43 years old (ranging from 18 through 101 with standard deviation of 17.7 years), 62 percent female, 57 percent employed, 42 percent married (21 percent divorced or separated, 15 percent widowed, and 22 percent never married), and 53 percent southern residents.

Although three follow-up surveys were conducted by telephone (1987-1988, 1988-1989, and 1992), the present study focuses on the first wave of data for the following reasons. First, the second wave includes only one of eight religiosity items that are used in this study (religion as guide for living), whereas the third wave adds just one more—frequency of attending religious services—to the second wave's item. Thus using these waves will result not only in very limited measurement of one of this study's multidimensional concepts, religiosity, but also inconsistency in the use of items across waves. Second, although the last wave includes various measures of religiosity like the first wave, a significant time interval between the two waves makes it impractical to conduct a meaningful longitudinal analysis (e.g., the effects of distress measured in 1979 or 1980 on coping behaviors reported 12 or 13 years later) as Levin and Taylor (1998) suggest. (The second and third waves have the shortest time interval, but they both lack good measures of religiosity.) Third, sample attrition over time makes it problematic to analyze the follow-up data for panel study, as the number of original respondents re-interviewed at subsequent waves significantly decreased from the initial sample of 2,107 to 935, 779, and 623.

The present data are not recent, collected more than two decades ago, and thus some may have concerns regarding the generalizability of findings based on the data. Such concern is legitimate if the question is whether the present findings are generalizable to adult African Americans of the present time, who might be different from those surveyed in 1979 and 1980. The present findings' generalizability of this meaning is, at best, unknown at this point and a legitimate topic for separate research. However, as far as generalizing from the present sample to its underlying larger population is concerned, the present findings are believed to be generalizable, given that this national sample is fairly representative of the African American population of 1980 (Jackson, 1991). Thus, although the present dataset cannot be used to directly address the applicability of GST to today's African Americans, it is still worth analyzing to test whether this general theory is applicable to African Americans who lived

back in 1980 given the importance of replication in theory testing based on data collected from different settings (in terms of time and place) or populations, such as gender or race/ethnic groups (Bollen, 1989; Lucas, 2003).

Measurement

In the NSBA, the respondents were asked about serious "personal problems" that had come up not only in a respondent's life but also in the lives of their significant others. Those who answered affirmatively were then asked how often they engaged in a list of behaviors during the time they were having those problems (1 = never, 2 = hardly ever, 3 = not too often, 4 = fairly often, 5 = very often): (1) fought and argued with other people, (2) drank alcohol or got high in other ways, (3) tried to put it out of their mind, (4) kept busy by doing other things like watching TV, reading books, and going places, and (5) prayed or got someone to pray for them. These items are used to construct the respondent's coping behaviors, *fighting/arguing* (item 1), *alcohol/drug use* (item 2), *escapism* (items 3 and 4), and *religious coping* (item 5).³

The survey also asked those who reported that they had serious personal problems how often they felt distressed during that time, using a single item of *anger* and eight items of *depression/anxiety*. The factor loadings of the eight items are found to vary from .51 to .76, and their interitem reliability coefficient is .84 (see Appendix).

Respondents who reported serious personal problems were asked to describe the nature of their problems, that is, types of strain. However, they were allowed to report only up to two problems, and most of them described just one problem. So, instead of creating measures with little variance, alternative items were used to construct variables of different types of strain.

First, the NSBA asked each respondent whether they had a list of problems in life during a month prior to the survey and, if the respondent reported they did, then how much the problem upset them. Instead of simply counting the number of problems reported, this study focused on those problems' upsetting nature or degree of undesirability to construct gender types of subjective strain for males (*financial strain*, *job strain*, and *criminal victimization*) and females (interpersonal *relational strain*). Operationalizing subjective strain is of special importance for the present study, given that the evaluation of objective strains "varies with group characteristics, such as gender" (Agnew, 2001, p. 321). Second, another female strain, *health strain*, was constructed using 11 items about diseases or conditions, including arthritis, ulcers, cancers, and stroke. For the same reason that the undesirability of life problems was focused on above, an index of health problems was created to measure the

3. While the second item does not include specific wording for drug use, it is implied by the phrase, "got high in other ways [than drinking alcohol]." In this description of measurement, the names of variables are all italicized.

degree of health impairment rather than number of health problems based on items asking how much a reported health problem keeps the respondent from working or carrying out their daily tasks. Finally, one more measure of female and male strain was constructed each, *housework strain* and *racial strain*. The former is female strain related to gender roles in the family, whereas the latter is treated as male strain in that it includes an item asking about job-related racial discrimination.

The NSBA data include six items of Rosenberg's (1965) global self-esteem, whose factor loadings (from .29 to .69) and Cronbach's alpha (.66) are acceptable. So, an index of *self-esteem* was constructed by calculating the mean of the six items. On the other hand, an index of *self-efficacy* was constructed by calculating the mean of four items measuring the extent of each respondent's confidence that their life would work out as they plan or expect. Factor loadings range from .44 to .58, and the interitem reliability coefficient is .56.

To operationalize social support, this study focused on an individual's intimate, personal relationships through social networks made up of other people with whom they interact. These other people all have the potential to aid the individual with some form of social support (Vaux, 1988), and the sense of having someone who loves and understands may, in and of itself, reduce distress, whether or not the person provides practical help and protection (Thoits, 1982). To measure an individual's potential *social support*, this study combined each respondent's standardized scores on two items asking about (1) how close their family members are in their feelings to each other (1 = not close at all, 2 = not too close, 3 = fairly close, 4 = very close) and (2) how many friends, not including relatives, they feel free to talk with about their problems (1 = none, 2 = a few, 3 = some, 4 = many). A high score on this measure indicates a relatively high level of social support potentially present in family and friend networks.

An index of *religiosity* was created using eight items tapping three key dimensions of religious involvement (Levin, Taylor, & Chatters, 1995)—organizational (attending religious services and participation in other activities), nonorganizational (reading religious materials, watching or listening to religious programs on TV or radio, praying, asking someone to pray), and subjective religiosity (perceived religiousness and religion as guide for living). Those items show high levels of factor loadings (from .34 to .69), and interitem reliability coefficient (.77).

Finally, in addition to the key demographic variable, gender (0 = male; 1 = *female*), included in the present analysis are other sociodemographic variables that tend to be associated with the above variables (Broidy & Agnew, 1997; Jackson & Neighbors, 1996; Levin et al., 1995; Mirowsky & Ross, 1986, 1989; Ross, Mirowsky, & Goldstein, 1990; Sherkat & Ellison, 1999; Taylor, Chatters, & Jackson, 1997): *age* at the time of interview, *social class* (sum of the respondent's education and total family income in z score; see Appendix), marital status (0 = not or never married; 1 = *married*), and region of residence (0 = the non-South; 1 = the *South*).

Analytic Strategy

To test the hypotheses, an ordinary least squares (OLS) regression analysis was conducted. Specifically, to test Hypothesis 1, measures of strain were regressed on gender and other exogenous variables, that is, sociodemographic variables and the four conditioning factors (Model 1). Depression and anger were then regressed on all the variables of the initial model to test Hypothesis 2 (Model 2). Next, coping behaviors were regressed on all the variables of the second model to test Hypothesis 3 (Model 3). Finally, three-way interaction terms (gender \times negative emotion \times conditioning factor) were added individually to the third model to test Hypothesis 4 (Model 4). For statistical significance ($\alpha = .05$), this study involved a one-tailed test for the hypothesized or expected relationships and two-tailed tests for non-hypothesized relationships, including any relationship whose direction is contrary to expectation.

Research Caveat

Before presenting results from estimating the above regression models, it is worth briefly discussing two methodological issues related to the present analysis. First, about one third of the NSBA respondents (763 of 2,107) reported no serious personal problem and thus have missing data on the measures of emotional and behavioral responses to strain. While this certainly raises a legitimate concern about missing data, it is also important to recognize that such loss of cases should be expected when negative emotions are measured in terms of a respondent's emotional reactions to strain that *actually* happened to them (or their significant others). This is the so-called "situational" emotion, which Agnew's (1992) GST focuses on, as opposed to the "trait" or "dispositional" emotion (Baron, 2004; Capowich et al., 2001; Mazerolle & Piquero, 1998; Mazerolle, Piquero, & Capowich, 2003).⁴ For example, when a researcher intends to measure situational anger, they will first ask respondents whether they experienced any strain during a specified period of time, and then ask only those who answered affirmatively to report whether they reacted to the strain with anger. In such a study, those who reported no strain for whatever reason will have legitimate missing data on situational anger. This is the case with the present data.

Second, for GST, causal relationships among strain, negative emotions, and coping are primarily contemporaneous (i.e., taking place within a relatively short period of time like "three months") rather than lagged over a long period

4. Alternatively, situational emotions can be measured by using scenarios describing certain strainful situations to ask how an individual would react emotionally (Broidy, 2001; Capowich et al., 2001; Mazerolle & Piquero, 1998; Mazerolle et al., 2003). While this alternative measure of situational emotions would help avoid having many missing cases since it uses hypothetical rather than actual situations, the NSBA focuses on strain that actually happened in the respondent's or their significant others' lives.

of time (Agnew, 1992, p. 65; Agnew & White, 1992; Brezina, 1996; Broidy, 2001). Thus, this study's causal interpretation of relationships between negative emotions and coping behaviors, measured in terms of a respondent's contemporaneous reactions to a personal problem, is consistent with GST. However, it is problematic to interpret relationships between strain and the emotional and behavioral responses to strain in terms of causation. Specifically, this study's measures of strain refer to the respondent's various problems at the time of or during a month prior to the survey. Therefore, causal interpretation of the effects of strain on negative emotions and coping behaviors amounts to explaining the past emotional and behavioral responses to strain using the present strain. The present study, however, interprets these relationships in terms of "contemporaneous" causation because the respondent's self-reported emotional and behavioral responses to serious personal problems in the past are likely to indicate how each respondent could have reacted to various types of strain they had during a month prior to or at the time of the survey. In other words, the previous measures of the emotional and behavioral responses to strain are assumed to be reasonable proxies of their *current* measures. If this assumption is reasonable, interpreting the effects of the *current* measures of strain on the previous measures of negative emotions and coping behaviors as contemporaneously causal effects is not unreasonable.⁵

Results

Table 1 presents means and standard deviations of all variables included in the present analysis, separately for males and females, and *p*-value associated with each variable's difference-of-means test. The *t*-test results show that African American men and women tend to differ not only in types of strain but also in emotional and behavioral responses to strain mostly in the expected direction. For example, although not all anticipated gender differences were observed, African American women were more likely than African American men to report female strain (health, relational, and housework strain) and less likely male strain (racial strain). Although these gender differences are consistent with Hypothesis 1, its test requires multivariate analysis (see below). Also, African American women reported higher levels of anger and depression/anxiety than their male counterparts, being consistent with previous research (e.g., Mirowsky & Ross, 1995). Finally, African American men and women were found different in coping behaviors with one exception of confrontational coping (fighting/arguing).

Table 2 summarizes results from estimating Models 1, 2, and 3. With demographic variables and conditioning factors controlled for, the gender differences

5. In fact, this is an assumption that GST researchers often made when they analyzed cross-sectional data, regressing *past* crime/deviance on *current* measures of strain and/or negative emotions (e.g., Agnew & White, 1992; Baron, 2004; Brezina, 1996; Broidy, 2001).

Table 1 *T* tests of gender differences in demographic characteristics, conditioning factors, strain, negative emotions, and coping behaviors

Variable	Female		Male		<i>p</i> -value (two-tailed)
	M	SD	M	SD	
Age	43.44	17.70	42.71	17.72	.357
Social class	-.15	1.61	.25	1.64	.000
Employed	.51	.50	.67	.47	.000
Married	.35	.48	.53	.50	.000
South	.54	.50	.53	.50	.889
Self-esteem	1.56	.65	1.46	.62	.000
Self-efficacy	1.81	1.28	2.10	1.24	.000
Social support	.03	1.45	-.06	1.57	.191
Religiosity	.62	3.02	-1.02	3.52	.000
Health strain	2.59	3.31	1.58	2.63	.000
Relational strain	.56	.93	.30	.68	.000
Housework strain	.51	2.19	-.83	1.65	.000
Financial strain	1.58	1.64	1.17	1.48	.000
Job strain	.56	1.29	.61	1.30	.383
Racial strain	-.19	1.91	.32	2.08	.000
Criminal victimization	.23	.87	.18	.76	.160
Depression/anxiety	3.44	.96	2.87	.94	.000
Anger	2.93	1.57	2.65	1.43	.002
Fighting/arguing	1.77	1.21	1.84	1.19	.328
Alcohol/drug use	1.58	1.13	2.26	1.47	.000
Escapism	.74	.34	.70	.35	.031
Religious coping	.87	.34	.66	.47	.000

in types of strain observed in the bivariate analysis (i.e., *t* test) remain significant, providing empirical support for Hypothesis 1. African American women were also found to be less likely to mention another male strain, job strain, than African American men. However, they were more, not less, likely to report financial strain, a male strain, which might reflect the trend that Broidy and Agnew (1997, p. 280) alluded to: "females have come to experience increased levels of financial strain." On the other hand, no significant gender difference in the strain of criminal victimization was found.

To further explore differences within as well as between female and male strains, pairwise comparisons were made among the seven unstandardized coefficients of strain. The bottom panel of Model 1 (see the boxes) reports the *z* score associated with each comparison (Paternoster, Brame, Mazerolle, & Piquero, 1998). First, with financial strain (which was hypothesized to be male strain but found to be female strain in the present data) set aside, differences between the gender effect on female and male strains are found significant, indicating that African American women are more likely to experience female than male strains. For example, they were more likely to report health strain

Table 2 Estimated OLS regression models of gender, strain, negative emotions, and coping behaviors ($n = 1,250$): unstandardized (with standard errors in parentheses) and standardized coefficients

Independent variables	Model 1			Model 2			Model 3						
	Health strain	Relational Housework strain	Financial strain	Job strain	Racial strain	Criminal victimization	Depression /anxiety	Anger	Fighting/ arguing	Alcohol/ drug use	Escapism	Religious coping	
Female	.49 (.18) .07*	.25 (.06) .12*	1.42 (.13) .31*	.21 (.10) .07+	-.26 (.08) -.09*	-.63 (.12) -.15*	.03 (.06) .02	.32 (.06) .15*	.31 (.10) .10*	-.17 (.07) -.06*	-.83 (.08) -.30*	.03 (.02) .04	.11 (.02) .13*
Age	.07 (.01) .35+	-.01 (.00) -.18+	-.02 (.00) -.08+	-.03 (.00) -.23+	-.03 (.00) -.31+	-.02 (.00) -.18+	-.00 (.00) -.05	-.00 (.00) -.03	-.01 (.00) -.13+	-.01 (.00) -.13*	.00 (.00) .02	.00 (.00) -.09+	.00 (.00) .06
Social class	-.37 (.06) -.18+	.00 (.02) .00	-.06 (.05) -.04	-.13 (.04) -.03+	-.00 (.03) -.00	.20 (.04) .16+	.03 (.02) .06	-.00 (.02) -.01	.04 (.04) .04	.02 (.02) .02	-.02 (.03) -.03	-.02 (.01) -.08+	-.00 (.01) -.02
Employed	-1.20 (.18) -.18+	.03 (.06) .02	.24 (.13) .06	-.12 (.10) -.04	-.69 (.08) -.24+	.15 (.12) .04	-.10 (.06) -.05	-.08 (.06) -.04	.08 (.10) .03	-.05 (.07) -.02	-.00 (.08) -.00	.02 (.02) .03	-.00 (.02) -.00
Married	-.13 (.17) -.02	-.10 (.06) -.05	.36 (.12) .08+	-.14 (.09) -.04	-.24 (.08) -.08+	.17 (.12) .04	-.03 (.06) -.02	-.07 (.05) -.04	.06 (.09) .02	-.05 (.07) -.02	-.08 (.07) -.03	-.01 (.02) -.01	.03 (.02) .04
South	-.04 (.16) -.01	-.12 (.06) -.06+	-.11 (.12) -.03	-.22 (.09) -.07+	-.19 (.08) -.07+	-.27 (.11) -.07+	-.18 (.06) -.10+	.07 (.05) .03	-.19 (.09) -.06+	-.22 (.06) -.09+	-.10 (.07) -.04	-.00 (.02) -.00	.00 (.02) .00
Self-esteem	-.71 (.19) -.09+	-.21 (.06) -.09+	-.27 (.14) -.06+	-.31 (.10) -.08+	.06 (.09) -.02	-.18 (.13) -.04	-.21 (.06) -.10+	-.05 (.06) -.02	.05 (.10) .01	-.16 (.07) -.06+	-.06 (.08) -.02	-.03 (.02) -.04	.01 (.02) .01
Self-efficacy	-.12 (.07) -.04	-.11 (.02) -.14+	-.18 (.05) -.10+	-.22 (.04) -.16+	-.04 (.03) -.03	-.04 (.05) -.02	.03 (.02) .05	-.08 (.02) -.10+	-.04 (.04) -.03	.03 (.03) .03	.00 (.03) .00	-.01 (.01) -.05	-.01 (.01) -.03
Social support	.02 (.05) .01	-.07 (.02) -.11+	.03 (.04) .02	-.12 (.03) -.10+	-.04 (.03) -.04	-.10 (.04) -.07+	-.03 (.02) -.04	-.02 (.02) -.03	-.04 (.03) -.04	.01 (.02) .01	-.02 (.02) -.02	.01 (.00) .06+	.00 (.01) .01
Religiosity	.04 (.03) .04	-.00 (.01) -.01	.05 (.02) .07+	.02 (.02) .04	.00 (.01) .00	.03 (.02) .04	-.00 (.01) -.01	.01 (.01) .03	-.05 (.01) -.11+	.00 (.01) .01	-.06 (.01) -.15*	.00 (.00) .05	.05 (.00) .38*
Health strain	1.32 -4.29*			1.41	3.87*	5.25*	2.47 ^{ab}	.08 (.01)	.04 (.02)*	.01 (.01)	-.01 (.01)	-.00 (.00)	-.00 (.00)
Relational strain	-8.34*			.34	4.95*	6.48*	2.54 ^{ab}	.26*	.10*	.02	-.03	-.05	-.02
							.12*	.16 (.05)	.02 (.04)	.09 (.04)	.06*	-.01 (.01)	.02 (.01)
								.10*	.02	.06*	-.03	-.03	.06*

Table 2 (continued)

Independent variables	Model 1			Model 2			Model 3						
	Health strain	Relational strain	Housework strain	Financial strain	Job strain	Racial strain	Criminal victimization	Depression /anxiety	Anger	Fighting/ arguing	Alcohol/ drug use	Escapism	Religious coping
Housework strain				7.53*	11.01*	11.63*	9.84 ^a	.06 (.01)	.00 (.02)*	-.00 (.02)	.01 (.02)	-.00 (.00)	.00 (.00)
Financial strain				3.62*	5.35*	5.35*	1.51 ^a	.07*	.00	-.00	.02	-.01	.00
Job strain						2.50*	-2.87 ^a	.01 (.02)	.06 (.03)	-.06 (.02)	.07 (.02)	-.00 (.01)	.00 (.00)
Racial strain							-4.91 ^a	.05 (.02)	.06 (.03)	-.03 (.02)	.07 (.03)	-.00 (.01)	-.00 (.01)
Criminal victimization								.14*	.06*	-.03	.08*	-.02	-.01
Depression/anxiety								.02 (.01)	.03 (.02)	.01 (.02)	.00 (.02)	.02 (.00)	.00 (.00)
Anger								.04	.04	.01	.01	.09*	.01
								-.00	-.02 (.03)	.04 (.04)	-.01	(.01)	-.02 (.01)
									.04	-.02	.02	-.04	-.04
									.07 (.04)	.21 (.04)	.04	(.01)	.04 (.01)
										.06*	.16*	.12*	.08*
										.32 (.02)	.14 (.02)	.00 (.01)	-.00 (.01)
										.41*	.16*	.01	-.01
R ²	.35	.12	.14	.14	.15	.13	.04	.24	.12	.23	.23	.04	.24

^aZ scores associated with pairwise comparisons of strain measures' unstandardized coefficients (Paternoster et al., 1998).

*p < .05 (one-tailed test); +p < .05 (two-tailed test).

(.49) than job strain ($-.26, z = 3.87$), racial strain ($-.63, z = 5.25$), and criminal victimization ($.03, z = 2.47$). Second, African American women were more likely to mention housework strain (1.42) as a personal problem than health ($.49, z = -4.29$) or relational strain ($.25, z = -8.34$), while the likelihood of their reporting health ($.49$) and relational strains ($.25$) were not significantly different ($z = 1.32$). Finally, although African American women were not more likely to experience criminal victimization ($.03$) than African American men, they were more likely to report the strain of criminal victimization than job strain ($-.26, z = -2.87$) or racial discrimination at work ($-.63, z = -4.91$).

The next two columns of Table 2 show estimated models of negative emotions (Model 2), depression/anxiety and anger. Statistical tests (Paternoster et al., 1998), conducted to compare each strain variable's effects on depression/anxiety and anger (see the boxed pair), provide a partial support for Hypothesis 2. Specifically, two female strains (health and housework strain) have larger effects on depression/anxiety than anger as hypothesized ($.08$ vs. $.04, z = 1.82$; and $.06$ vs. $.00, z = 2.42$), but the effects of the other female strain (relational strain) are not significantly different ($.12$ vs. $.16, z = -.74$). On the other hand, the effects of all male strains on depression/anxiety and those on anger are not significantly different ($.01$ vs. $.06, z = -1.42$; $.05$ vs. $.06, z = -.44$; $.02$ vs. $.03, z = -.46$; and $-.00$ vs. $.07, z = -1.29$), showing that male strains do not necessarily have stronger effects on other-directed than self-directed emotions. It is also worth noting that African American women were still found to feel more depressed and anxious as well as angry than African American men in response to strain after controlling for types of strain.

Estimated models of coping behavior are presented in the last four columns of the table (Model 3), and the standardized coefficients of depression/anxiety and anger are compared in each model to test Hypothesis 3. As hypothesized, other-directed emotion, anger, has larger effects ($.41$) on other-directed deviant coping behavior, fighting/arguing, than self-directed emotion, depression ($.06$). Also, being consistent with the hypothesis, self-directed emotions, depression and anxiety, have significant effects ($.12$ and $.08$) on self-directed, nondeviant (escapism) and legitimate coping behaviors (religious coping), whereas the effects of other-directed emotion, anger, on both coping behaviors are not significant ($.01$ and $-.01$). However, Hypothesis 3 is not supported in the model of alcohol/drug use, where other- and self-directed emotions are found to have the same effects ($.16$) on the self-directed deviant coping behavior.

For further exploration, the unstandardized coefficients of depression/anxiety and anger were compared across the models of coping behavior. First, self-directed emotions, depression and anxiety, have stronger effects on self-directed coping behavior of drinking alcohol or getting high than other-directed behavior of fighting and arguing with other people ($.21$ vs. $.07, z = -2.63$). However, the effects of depression/anxiety on fighting/arguing ($.07$) were not different from those on either escapism ($.04, z = .85$) or religious coping ($.04, z = .97$). On the other hand, other-directed emotion, anger, was found to have

larger effects on other-directed (fighting/arguing, .32) than self-directed coping behaviors—alcohol/drug use (.14, $z = 5.62$), escapism (.00, $z = 13.90$), and religious coping (−.00, $z = 14.03$).

To test Hypothesis 4, three-way interaction terms (gender \times negative emotion \times conditioning factor) were added, one at a time, to Model 3 of each coping behavior (Model 4). To estimate interactions, eight multiplicative terms (female \times 2 negative emotions \times 4 conditioning factors) were constructed (mean or a constant was subtracted from constituent terms, except the gender variable, before multiplying them to avoid a potential problem of collinearity). Table 3 presents the coefficients of interaction terms, none of which had VIF (variance inflation factor) larger than 2.00. As the table shows, only 7 of 32 interaction terms were found significant.⁶

The first column shows that two of the eight interactions estimated for the fighting/arguing model, both of which involve religiosity, were found significant in the expected direction (i.e., negative). That is, as hypothesized, religiosity is more likely to weaken the positive effects of anger and depression/anxiety on the confrontational coping behavior among African American women than

Table 3 Unstandardized (with standard errors in parentheses) and standardized coefficients of interactions involving gender, negative emotions, and conditioning factors ($n = 1,250$)

Interaction Terms	Model 4			
	Fighting/arguing	Alcohol/drug use	Escapism	Religious coping
(female \times depression/anxiety \times self-esteem)	−.04 (.09) −.01	−.00 (.10) −.00	.01 (.03) .01	−.02 (.03) −.02
(female \times depression/anxiety \times self-efficacy)	.05 (.03) .05	.04 (.04) .03	.00 (.01) .00	.00 (.01) .00
(female \times depression/anxiety \times social support)	−.01 (.02) −.01	−.08 (.03) −.08*	−.01 (.01) −.03	.01 (.01) .02
(female \times depression/anxiety \times religiosity)	−.03 (.01) −.06*	.00 (.01) .00	.00 (.00) .01	−.01 (.00) −.06+
(female \times anger \times self-esteem)	−.05 (.05) −.02	.10 (.06) .05	.02 (.02) .03	.03 (.02) .04*
(female \times anger \times self-efficacy)	.00 (.02) .00	.00 (.02) .00	.01 (.00) .06*	−.00 (.01) −.01
(female \times anger \times social support)	−.02 (.02) −.03	−.03 (.02) −.05*	.00 (.00) .02	−.00 (.00) −.00
(female \times anger \times religiosity)	−.01 (.00) −.05*	−.01 (.01) −.03	.00 (.00) .01	−.00 (.00) −.04

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

6. When the interactive model was estimated by including all the eight multiplicative terms simultaneously, two terms became non-significant: (female \times anger \times religiosity) in the aggression model and (female \times anger \times social support) in the drug use model.

African American men. Put differently, the same level of religiosity is more likely to help African American women avoid fighting and arguing with other people in reaction to the same level of anger and depression/anxiety than African American men. This is consistent with Jang and Johnson's (2005) finding that the distress-buffering effects of religiosity are more likely for women than men. In the model of alcohol/drug use, two interaction terms involving social support are found significant in the hypothesized direction (i.e., negative). For both types of negative emotions, social support is more likely to have distress-buffering effects on alcohol/drug use for African American females than their male counterparts. This indicates that the ability of social support in protecting individual from drinking alcohol and using drug in response to anger and depression/anxiety tends to be greater for African American women than men.

In the next model, only one of eight terms (i.e., female \times anger \times self-efficacy) is significant, while it is in the expected direction (i.e., positive). That is, self-efficacy is more likely to enhance the positive effects of other-directed, angry emotion on self-directed, escapist coping behavior among African American women than among African American men. In other words, if there are two equally angry African Americans—a man and a woman—who have the same level of confidence in handling issues and problems in life, it is African American woman who is more likely to take the escapist approach to cope the angry feeling than African American man.

Finally, self-esteem is more likely to lead African American women to pray when they are angry in response to strain than African American men. These are interesting findings, consistent with Hypothesis 4, given that anger was found to have no significant effect on either coping behavior without each interaction term in the model (see Model 3 of Table 2). On the other hand, religiosity is more likely to decrease, not increase, the positive effects of depression/anxiety on religious coping among African American women than African American men. While this is contrary to what was hypothesized, alternatively, it might indicate that depression/anxiety is more likely to weaken the positive effects of religiosity on praying and asking for prayer among African American women than African American men. This is less counterintuitive than interpreting the negative three-way interaction term as showing religiosity weakening the effects of depression/anxiety on religious coping.

Summary and Conclusion

This study was intended to empirically examine the "three ways," in which Broidy and Agnew (1997, p. 287) proposed "GST ... might explain gender differences in crime." Previous researchers have not evaluated the three explanations as often as the other issue of gender differences in crime Broidy and Agnew addressed, such as whether GST is applicable to both males and females. This relative lack of research on this topic could be attributed partly to the unavailability of data that include all of key variables necessary for such a test,

especially measures of different types not only of strain but also of emotional and behavioral responses to strain. While such data are still not easily available, the NSBA data enabled us to test hypotheses derived from Broidy and Agnew's three propositions.

Broidy and Agnew's first proposition that males and females tend to experience different types of strain generally received empirical support. As expected (Hypothesis 1), African American women were more likely than African American men to report female strains—that is, strains related to physical health, interpersonal relations, and gender roles in the family—and less likely to mention male strains (work-related, racial as well as job strain) with one exception, financial strain. This exception, however, is likely to indicate the increased concern with financial success and security among females, especially African American women, reflecting "the fact that increasing numbers of females live alone, head families, and/or have responsibility for supplying a substantial share of family income" (Broidy & Agnew, 1997, p. 289).

This study empirically examined Broidy and Agnew's second proposition that males and females differ in their emotional and behavioral responses to strain by focusing on the systematic relationships between different types of strain and negative emotions (Hypothesis 2), on the one hand, and between negative emotions and coping behaviors (Hypothesis 3), on the other hand. In this study, the latter relationships generally received more support than the former. That is, first, female strains were more likely to generate self-directed (depression and anxiety) than other-directed emotions (anger), although male strains were not found to have stronger effects on other-directed than self-directed emotions. Second, self-directed emotions had larger effects on self-directed, escapist, and religious coping behaviors (but not on alcohol/drug use) than other-directed emotion, whereas other-directed angry emotion had stronger effects on other-directed coping behavior (fighting and arguing with other people) than self-directed emotions. In addition, self-directed emotions were more likely to lead to self-directed than other-directed coping behaviors, and other-directed emotions were more likely to result in other-directed than self-directed behaviors.

Like previous research on GST, the least empirical evidence was found for the third proposition that conditioning factors help explain gender differences in types of emotional and behavioral responses to strain (Hypothesis 4). It was partly because of social support and religiosity that African American women were less likely to engage in fighting/arguing and alcohol/drug use to cope with strain-generated negative emotions, such as depression, anxiety, and anger, than African American men. Also, African American women with positive self-esteem and high self-efficacy were more likely to turn to nondeviant and legitimate coping strategies than their male counterparts when they felt angry as a result of strain. However, about three quarters of interaction terms estimated were found not significant, failing to support the hypothesis about conditioning factors. This failure "may be partly due to the fact that it is difficult to detect conditioning effects in survey research" (Agnew, 2006, p. 103).

In sum, overall findings tend to provide general support for Broidy and Agnew's first two propositions but only limited support for the third. This might imply that the concept of gender-typed strain (i.e., male versus female strains) and systematic relationships among different types of strain, negative emotions, and coping behaviors (i.e., self- versus other-directedness) have more potential to enhance the GST explanation of gender differences in crime and deviance than the concept of conditioning factors. That is, African American women were less likely than African American men to turn to deviant coping strategies, whether other-directed (i.e., fighting and arguing with other people) or self-directed (i.e., drinking alcohol or getting high in other ways), when they experienced strain partly because their strains were more likely to generate self-directed emotions (i.e., depression and anxiety), which in turn were less likely to lead to deviant coping behaviors than other directed, angry emotion.

In addition, the present study found empirical evidence that a strained individual is more likely to engage in legitimate coping behavior when they experience self- rather than other-directed emotions in response to strain. Although neither Agnew (1992) nor Broidy and Agnew (1997) focused on legitimate coping as much as illegitimate coping, Broidy (2001) later addressed the issue and tested a hypothesis about relationships between negative emotions and legitimate coping. In her study, Broidy found that females were more likely than males to report that they would rely on legitimate coping strategies if they had experienced strain. She also reported that nonangry emotions had positive effects on legitimate coping, but anger had no significant effects. These are consistent with the present finding that African American women are more likely than African American men to engage in legitimate coping of praying or asking others to pray during a time of personal adversity, and that only self-directed emotions have positive effects on the religious coping in response to strain.

It is not surprising that GST as a criminological theory pays less attention to legitimate coping behaviors than crime and deviance. However, further research on legitimate coping along with conditioning factors might help GST contribute to the explanation of desistance from crime. Social control and social learning researchers have paid more attention to this research topic than strain researchers. For example, Laub, Nagin, and Sampson (1998) reported that age-graded events, such as a good marriage and a quality job, are associated with desistance from crime (see also Laub & Sampson, 2001; Sampson & Laub, 1993). Also, Warr (1998) empirically demonstrated how life-course transitions involving changes in peer relations as well as a good marriage (which decreases criminal activity by reducing interactions with peers, especially delinquent friends) contribute to desistance from crime (see also Giordano, Cernkovich, & Holland, 2003).

Specifically, this study proposes that future research on GST focus on how strain could have life-transforming or turning-point effects on people's lives rather than limiting its study to the explanation of strain's detrimental effects.

Such positive outcomes of strain are likely when personal adversity or crisis in life becomes a powerful force that awakens people to the need of dramatic change or transformation of some kind. This new approach has a potential contribution to research on desistance from crime because desistance does not occur in a vacuum. For example, criminals are likely to desist from crime by engaging in legitimate activity and conventional lifestyles rather than simply not committing crime. Prior research on desistance from crime tends to focus on how life-course transitions reduce criminal activity via some causal mechanism of social control and/or social learning. To complement this approach, GST researchers may examine how strain could become a positive force that significantly changes an individual's life and behavioral patterns, thereby having them desist from crime.

Finally, it is necessary to briefly revisit a potential limitation related to this study's analysis of cross-sectional data. That is, the effects of "current" strain on the past measures of negative emotions and coping behaviors were interpreted as contemporaneous "causal" effect, assuming that the measures of the emotional and behavioral responses to strain indicate how each respondent would have reacted to strain that they had during a month before survey. This interpretation, of course, should be taken with caution because it is problematic to the extent that the assumption is not correct, while it is the same assumption that previous researchers had to make, whether implicitly or explicitly, when they analyzed cross-sectional data (e.g., Agnew & White, 1992; Baron, 2004; Brezina, 1996; Broidy, 2001).

So, there is no doubt that it is a main task for GST researchers to collect prospective longitudinal data with a relatively short interval (e.g., 3 months or less), which has not been done yet. In the mean time, however, the standard requirement of temporal priority as a condition of causality should be sensibly applied to evaluate results from analyzing cross-sectional data because the common practice of "lagging or leading variables" (i.e., measuring an independent variable at a time before the dependent variable) "cannot establish causal priority" (Bollen, 1989, p. 64). If a longitudinal analysis meets the requirement of temporal priority but not other perhaps more or equally important conditions (e.g., a required length of interval between cause and effect), then such analysis may not be necessarily superior to cross-sectional analysis that was conducted making an assumption about temporal priority but meeting the other conditions.

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Appendix. Items Used for Analysis

Variable	Description of item (response category)	(α) Factor loading?
<i>Coping behavior</i>	"Thinking about the last time you [had a personal problem you couldn't handle by yourself], ... during [the] time [you were having trouble with that problem], how often did you ..." (1 = Never; 2 = Hardly ever; 3 = Not too often; 4 = Fairly often; 5 = Very often)	
Fighting/arguing	... fight and argue with other people?	
Alcohol/drug use	... drink alcohol or get high in other ways?	
Escapism	(1) ... try to put it out of your mind? (2) ... keep busy by doing other things like watching TV, reading books, and going places?	
Religious coping	... pray or get someone to pray for you?	
<i>Negative emotions</i>	"Thinking about the last time you [had a personal problem you couldn't handle by yourself], ... during [the] time [you were having trouble with that problem], how often ..." (1 = Never, 2 = Hardly ever, 3 = Not too often, 4 = Fairly often, 5 = Very often)	(.84)
Depression/ anxiety	(1) ... did you feel lonely? (2) ... did you feel that you just couldn't get going? (3) ... were you depressed? (4) ... were you jumpy or jittery? (5) ... did you cry easily or have crying spells? (6) ... did you feel like not eating or have a poor appetite? (7) ... did you have restless sleep or trouble getting to sleep? (8) ... did you actually feel physically sick?	.61 .70 .76 .61 .55 .63 .66
Anger	... did you lose your temper?	.51
<i>Strain</i>		
Health strain	"Please tell me whether a doctor has told you that you have [any of the following health] problems." If Yes → "How much does this keep you from working or carrying out your daily tasks?" (1 = Not at all, 2 = Only a little, 3 = A great deal) (1) arthritis or rheumatism (2) ulcers (3) cancers (4) hypertension or "high blood pressure" (5) diabetes or "sugar" (6) a liver problem (7) a kidney problem (8) a stroke (9) a blood circulation problem or "hardening of the arteries" (10) sickle cell anemia (11) heart trouble or heart attack "Over the past month or so, have you [any of the following]?"	

Appendix. (continued)

Variable	Description of item (response category)	(α) Factor loading?
Relational strain	If Yes → "How much did that upset you?" (1 = Not at all, 2 = Only a little, 3 = A lot, 4 = A great deal) (1) ... had family or marriage problems? (2) ... had problems with your children? (3) ... had problems with your love life?	
Housework strain	"Please tell me if [family responsibilities] have been important in keeping you from getting the really good jobs." (1 = Not at all important; 2 = Not too important; 3 = Fairly important; 4 = Very important) "How much does housework keep you from doing other things you have to do?" (1 = Not at all; 2 = Only a little; 3 = A lot; 4 = Great deal) "In general, do you ever feel overworked because of all the things you have to do [in your household]?" (0 = No; 1 = Yes)	
Financial strain	... had money problems?	
Job strain	... had job problems?	
Racial strain	... or your family been treated badly because of your race? If the respondent is employed ... "At your work place, are Black people treated unfairly or badly in any ways?" (0 = No; 1 = Yes) If the respondent is not employed ... "Are there any . . . ways you have been treated unfairly or badly because you are Black while working or looking for work?" (0 = No; 1 = Yes) "Please tell me if [your being Black has] been important in keeping you from getting the really good jobs." (1 = Not at all important; 2 = Not too important; 3 = Fairly important; 4 = Very important) " ... think about the way things are today for Blacks compared to how they were 20 years ago just before the Civil Rights movement. Do you think there is more racial discrimination now, less, or have things remained pretty much the same?" (1 = Less discrimination; 2 = Same; 3 = More discrimination)	
Criminal victimization	... or your family been the victim of a crime?	
Self-esteem	"Please tell me how often [each of the following statements] is true for you ..."	

Appendix. (continued)

Variable	Description of item (response category)	(α) Factor loading?
	(1 = Almost always true; 2 = Often true; 3 = Not often true; 4 = Never true)	(.66)
	(1) I am a useful person to have around.	.29
	(2) I feel that I'm a person of worth.	.38
	(3) I feel that I can't do anything right.	.52
	(4) I feel that my life is not very useful.	.69
	(5) I feel I do not have much to be proud of.	.67
	(6) As a person I do a good job these days.	.32
<i>Self-efficacy</i>	"Do you think it better to plan your life a good ways ahead, or would you say life is too much a matter of luck to plan ahead very far?" (0 = Too much luck to plan; 1 = Plan ahead)	(.56) .47
	"When you do make plans a head, do you usually get to carry out things the way you expected, or do things usually come up to make you change your plans?" (0 = Have to change plans; 1 = Carry out way expected)	.58
	"Have you usually felt pretty sure your life would work out the way you want it to, or have there been times when you haven't been sure about it?" (0 = Haven't been sure; 1 = Pretty sure)	.44
	"Some people feel they can run their lives pretty much the way they want to, others feel the problems of life are sometimes too big for them. Which one are you most like? (0 = Problems of life are too big; 1 = Can run own life)	.47
<i>Social support</i>	"Would you say your family members are very close in their feelings to each, fairly close, not too close, or not close at all?" "Think of the friends, not including relatives, that you feel free to talk with about your problems—would you say that you have many, some, a few, or no friends like that?"	
<i>Religiosity</i>	"How often do you usually attend religious services?" (1 = Less than once a year; 2 = A few times a year; 3 = A few times a month—1 to 3 times; 4 = At least once a week—1 to 3 times; 5 = Nearly everyday—4 or more times a week)	(.77) .69
	"... how often do you take part in other activities at your place of worship?"	.63
	"How often do you read religious book or other religious materials?"	.61
	"How often do you watch or listen to religious programs on T.V. or radio?"	.34
	"How often do you pray?"	.52

Appendix. (continued)

Variable	Description of item (response category)	(α) Factor loading?
	"How often do you ask someone to pray for you?" (1 = Never; 2 = A few times a year; 3 = A few times a month—1 to 3 times; 4 = At least once a week—1 to 3 times; 5 = Nearly everyday—4 or more times a week)	.48
	"How religious would you say you are?" (1 = Not religious at all; 2 = Not too religious; 3 = Fairly religious; 4 = Very religious)	.57
	"How important is going to church or a place of worship to you?" (1 = Not important at all; 2 = Not too important; 3 = Fairly important; 4 = Very important)	.51
<i>Social class</i>		
Education	"How many grades of school did you finish?" (0 through 17 with 17 being "17 or more")	
Family income	"What was the total income of all persons living in your household in 1978, that is considering all sources such as salaries, profits, wages, interest, and so on, from all family members?" (0 = \$0; 1 = \$1-999; 2 = \$1,000-1,999; 3 = \$2,000-2,999; 4 = \$3,000-3,999; 5 = \$4,000-4,999; 6 = \$5,000-5,999; 7 = \$6,000-6,999; 8 = \$7,000-7,999; 9 = \$8,000-8,999; 10 = \$9,000-9,999; 11 = \$10,000-11,999; 12 = \$12,000-14,999; 13 = \$15,000-19,999; 14 = \$20,000-24,999; 15 = \$25,000-29,999; 16 = \$30,000 or more)	