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Do Frustrated Economic Expectations and Objective Economic Inequity Promote Crime?

A Randomized Experiment Testing Agnew's General Strain Theory

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ABSTRACT

Although prior research concerning Agnew's General Strain Theory (GST) has generated renewed support for the perspective, it remains limited in two critical ways. First, research tends to measure strain in terms of noxious stimuli while neglecting Agnew's conception of strain as the disjunction between *expected* and *actual* outcomes or as the disjunction between *fair* and *actual* outcomes. Second, studies rely exclusively on correlational designs that preclude causal assertions about the relationships among strain, anger, and crime. This study addresses both limitations by conducting the first experimental test of GST. Results indicate that (1) respondents assigned at random to experimental conditions involving strain as a disjunction between expected and actual outcomes or between fair and actual outcomes report significantly higher levels of situational anger, (2) high levels of situational anger are significantly associated with a higher self-reported likelihood of engaging in theft from an employer, and (3) these relationships are not significantly conditioned by perceived social support.

KEY WORDS

Expectations / Crime / General Strain / Strain.

Strain theory

Historically, strain theories of crime contend that individuals are pressured into crime as a result of some sort of goals/means disjuncture. Although the intellectual roots of these theories can be traced to Durkheim, Merton's (1938) conception of strain theory provided the first account detailing the anomic outcome of crime, especially among lower classes, from a process in which society's social structure does not provide the (legitimate) means necessary for individuals to attain their economic goals. Extensions and modifications of Merton's theory by Cohen (1955), who focused on the role of status as the goal to be pursued by middle- and lower-class boys, and Cloward and Ohlin (1960), who observed that blocked access to legitimate and illegitimate opportunities, which vary across different types of communities, would increase the likelihood of antisocial and criminal activity, served to promote strain theory explanations of crime and deviance.

General Strain Theory

Although empirical research has yielded little support for traditional strain theories that predict crime to result from unrealized economic aspirations, Agnew's (1992, 2001, 2006) General Strain Theory (GST) has expanded upon them in four ways to generate a resurgence of the strain perspective. First, whereas prior strain theories conceived of strain as a purely economic phenomenon involving unrealized aspirations for middle-class status and/or monetary success, Agnew conceives of strain more broadly as a social psychological phenomenon subsuming multiple sources of frustrated aspirations. Second, GST draws on the equity/justice and stress literatures (Adams 1963; Hegtvedt 1990; Pearlin 1989) to suggest that strain results not only from unrealized aspirations, but also from unrealized expectations, perceived injustice, the removal of positively valued stimuli, and the imposition of noxious stimuli. Third, GST is integrative, suggesting that strain is most likely to promote crime when the strain results in negative emotions and under conditions of low social support, limited coping resources, high association with criminal peers, and low social control. Fourth, GST suggests that

certain strains, including those involving perceived injustice and those creating an incentive for criminal coping, are particularly likely to promote crime.

The role of strain in GST

Although a growing research literature suggests preliminary support for GST (Agnew and White 1992; Paternoster and Mazerolle 1994; Mazerolle and Piquero 1997, 1998; Baron and Hartnagel 2002; Hay 2003; Baron 2004), existing tests employ limited measures of strain involving primarily the imposition of negative stimuli and/or the removal of positively valued stimuli. Agnew and White (1992) found that crime and drug use were more likely among those who experienced such negative stimuli as criminal victimization, illness/injury, poor social relationships, neighborhood problems, the death of close friends, and parental unemployment. Although primarily cross-sectional, this study found that these relationships remained net of controls for age, sex, social control, and differential association. Using longitudinal data, Paternoster and Mazerolle (1994) uncovered that, net of prior delinquency, adolescents living in high-crime/run-down neighborhoods, experiencing such stressors as parental unemployment or divorce, and reporting negative relations with teachers, parents, or peers reported significantly more delinquency. They failed to find a longitudinal relationship between delinquency and a measure of 'classic' strain.

Several studies have attempted to provide further support for GST's assertion that noxious stimuli and the removal of positive stimuli may promote crime. Building on the stress process literature, such studies typically measure strain in terms of (1) lifetime exposure to traumatic events such as natural disasters or the death of loved ones and (2) exposure to recent life events such as the end of a romantic relationship or unemployment. Van Gundy (2002) combined a lifetime trauma index with a recent life events index and found that reports of higher levels of stress exposure were associated with more reports of criminal involvement (see also Eitle and Turner 2002, 2003). Hoffman and Cerbone (1999) demonstrated that increases in stress exposure across time were associated with increases in delinquency and Kim *et al.* (2003) used reciprocal-effects panel modeling to demonstrate a relationship between past stress exposure and future externalizing behavior (see also Agnew 1989; Hoffman and Miller 1998).

Despite the finding that aggregate measures of stress exposure are associated with crime, Agnew (2001: 324) argues that 'the use of such cumulative measures means that we lack information on the effect of the individual strain measures'. Further, he argues that the stressors most likely to promote crime include those resulting from the voluntary behavior of

others as opposed to chance, those characterized by long duration, those from which it is difficult to escape via legal means, and those that involve low social control. The above studies tend to employ stress-exposure scales that lack one or more of these criteria. More likely to be associated with crime, but less empirically studied, are strains involving the failure to achieve expected or equitable outcomes.

The limited research focusing on the failure to achieve positively valued goals tends to fall into two categories. First, this literature is built on the premise that early tests of classic strain garnered weak support because they failed to operationalize a disjunction between aspirations and expectations correctly. Farnworth and Leiber (1989) have argued that initial attempts to test classic strain focused on educational and occupational, rather than monetary, goals. They used revised measures of monetary strain to demonstrate that delinquency was related to a disjunction between monetary aspirations and expectations. Jensen (1995), however, used the same data to demonstrate that classic strain's predicted interaction between monetary aspirations and expectations was not related to delinquency after controlling for expectations. Further research has attempted to operationalize classic strain in terms of respondents' self-reported 'dissatisfaction' with economic outcomes. Cernkovich et al. (2000) found a moderate relationship between economic dissatisfaction and income-generating crime (see also Burton et al. 1994; Agnew et al. 1996; Hagan and McCarthy 1997).

Second, research has explored whether subjective, or perceived, injustice promotes crime (Mazerolle and Piquero 1998; Brody 2001; Eitle 2002). Although limited research suggests that individuals are *not* more prone to crime merely by virtue of believing that a group to which they belong experiences discrimination in the aggregate (Cernkovich and Giordano 1979), other research suggests that the perception of personal experience with discrimination may be associated with crime. Eitle (2002) found that crime was more likely among those who perceived discrimination from employers, police, neighbors, and landlords on the basis of ascribed, demographic characteristics. Although research has yet to examine explicitly whether monetary inequity promotes crime, preliminary research suggests that perceptions of unjust academic evaluation may be associated with crime (Mazerolle and Piquero 1998; Mazerolle et al. 2003).

Although the above studies find preliminary evidence that economic dissatisfaction and inequity may promote crime, they are limited in a number of ways. First, they sometimes fail to control for variables from alternative theoretical perspectives that could render relationships spurious. Second, even among those studies employing controls, research has been largely cross-sectional, thereby failing to preclude the possibility that prior crime leads to future strain. Third, studies concerning discrimination/inequity tend to

combine multiple items into overall scales despite Agnew's caution that different sources of strain may have differential influences on crime. As such, the influence of discrimination and inequity on crime might be artificially attenuated by collapsing important and less important sources of strain. Fourth, research has yet to measure strain explicitly in terms of the disjunction between *expected* and *actual* outcomes; rather, the first set of studies cited above focuses on providing new means of operationalizing a gap between *aspirations* and *expectations*. Finally, although some studies provide initial evidence concerning the influence of inequity on crime, studies focusing on subjective discrimination leave open the question of whether objective economic inequity promotes crime (Adams 1963).

The role of negative emotions in GST

Whereas initial tests of GST focused on the relationship between strain and crime, further research has examined the prediction that strain promotes crime by producing negative emotions that, in turn, may promote crime as a coping mechanism. Research suggests that depression is not associated with higher delinquency (Aseltine et al. 2000; Piquero and Sealock 2000, 2004; Broidy 2001; Hagan and Foster 2003; Sigfusdottir et al. 2004; though see DeCoster and Heimer 2001), but numerous studies find that anger may mediate some of the relationship between strain and delinquency. Mazerolle and Piquero (1997) found that respondents experiencing higher strain reported a higher likelihood of violence and that a portion of the relationship could be attributed to higher anger among strained respondents. Similar results characterize other studies (Mazerolle and Piquero 1998; Aseltine et al. 2000; Piquero and Sealock 2000; Capowich et al. 2001; Mazerolle et al. 2003) and preliminary research suggests that those who react to strain with delinquency may be less prone to experience future negative emotions (Brezina 1996).

Although studies suggest that anger mediates only a minority of the relationship between strain and crime, such studies tend to operationalize negative emotion in terms of dispositional, as opposed to situational, anger. Dispositional measures tend to include such items as the degree to which respondents generally have a 'bad temper' (Mazerolle and Piquero 1998; Hagan and Foster 2003). Thus, they may reflect stable personality differences, such as the 'temper' component of Gottfredson and Hirschi's (1990) self-control concept, rather than emotions resulting specifically from time-varying differentials in strain. Researchers have recognized this and begun to investigate the role of situational anger. Capowich et al. (2001) found evidence that situational anger mediates the relationship between strain and violence. On this score, Mazerolle et al. (2003: 131) offer that 'the relationship

between anger and deviant outcomes is attenuated when trait-based measures of anger are used'.

Three considerations preclude strong statements with respect to how correlations among strain, anger, and crime should be interpreted. First, research employing dispositional measures of anger might be interpreted as evidence that crime results from low self-control rather than from strain. This conclusion is both plausible and likely, given that some research has explicitly operationalized dispositional anger using items derived directly from the 'temper' component of Grasmick et al.'s (1993) self-control scale. Second, even given the results using situational measures of strain, Gottfredson and Hirschi's theory predicts that situational anger bears no relation to crime once self-control is held constant. According to this perspective, anger is not a critical 'positive' cause of crime; rather, everybody feels anger and the critical distinction between criminals and non-criminals is the degree to which they exert self-control over their emotions. Only one study (Piquero et al. 2004) simultaneously incorporates measures of situational anger and self-control, but it does not explicitly examine the association between situational anger and crime net of self-control. Third, despite the assertion that strain promotes anger, existing research is based exclusively on methods that preclude causal conclusions, particularly among cross-sectional designs. Absent experimental manipulation, it remains plausible that a correlation between anger and strain results from the influence of anger on strain or from the influence of unmeasured variables on both.

The role of social support in GST

Although Agnew suggests that strain is likely to promote crime under a variety of circumstances, he suggests that social support may be among the most important variables that condition this relationship. He predicts that individuals with strong networks of social support may navigate strain and negative emotions more successfully than counterparts via non-criminal means. Agnew and White (1992) found preliminary evidence that strain is more strongly associated with crime when an individual associates with deviant peers or possesses a weak sense of self-efficacy, but research has yielded inconsistent results concerning the moderating role of social support (Mazerolle and Maahs 2000). Paternoster and Mazerolle (1994) examined a number of potential moderators and found that social support did not moderate the strain/crime relationship, whereas other research has revealed that social support may lower the likelihood of reacting to strain with crime (Capowich et al. 2001), particularly among females (Robbers 2004; though see Piquero and Sealock 2004).

In light of these contradictory findings, two plausible origins merit particular attention. First, the results may indicate that variables such as social support condition only the relationship between crime and some forms of strain. Further research would benefit from paying closer attention to the way social support and similar variables condition the relationship between crime and the failure to achieve positively valued outcomes. Second, given the possibility of a reciprocal relationship between strain and crime, it may be that researchers using traditional methods fail to isolate the portion of strain promoting crime from the portion of strain that crime promotes prior to calculating multiplicative interaction terms. Whereas Mazerolle and Maahs (2000) suggest one alternative means of testing the conditional effects of strain, another means involves employing a randomized experimental design that isolates the influence of strain on crime prior to calculating multiplicative interaction terms.

Overview of paper

In an effort to overcome extant research limitations, the present study employs a new method for testing GST, built on two of Agnew's (2001: 348) recommendations for expanding tests of GST: (1) isolating those forms of strain that are most prone to result in crime, and (2) 'present[ing] people with vignettes describing these types of strain and then ask[ing] how likely they or others would be to respond to them with crime'. Here, we (1) present measures of unrealized economic expectations and objective economic inequity, (2) examine each one's association with situational anger in a randomized experimental vignette, (3) examine the association of situational anger with criminal intent net of adjustments for competing variables, and (4) examine the degree to which the above relationships are conditioned by social support.

Methods

Participants were recruited from a variety of social science classes at two public universities in the United States in 2004. Following prior non-experimental tests of GST, each participant read the following hypothetical scenario:¹

¹ It should be noted that the scenario presented to respondents indicated that the actor's name was either John or Jennifer but for ease of presentation we will refer to the actor only as 'John'.

John is a high-school senior from a working-class background. He has just been accepted to a local college and, to earn money toward his first semester, has been working evenings and weekends at a local grocery store where he stocks shelves and serves as a cashier for \$6/hour. He works diligently, knows his job well, and develops a reputation for helping other employees when they have questions about a newly installed computer system. For six months, he regularly arrives for work on time, works hard during his shifts, and is willing to cover the shifts of those who call in sick. One day he asks his boss for a promotion to the position of assistant supervisor, which pays \$9/hour. On two separate occasions, his boss tells him that if he continues to be a good employee, he can expect the promotion within three months. Three months pass and, one day, John reminds his boss about the promised promotion.

Unlike prior research however, the next portion of the scenario took one of three different forms, each of which was randomly distributed among respondents:

Condition 1: His boss says that he has already been promoted and may start his new job the next day.

Condition 2: His boss says that the company needs to save money and that he will therefore not be giving anybody a promotion this year.

Condition 3: His boss says that John will no longer be receiving the promotion. The promotion instead goes to the boss's son, who has only been working at the company for a few weeks.

Scenarios for all three conditions ended with the following information:

A month or so later, just before classes are to begin at his local college, John finds himself short of registration fees by about \$100. His parents cannot afford to pay the fees for him so, when another employee forgets to lock his cash register before leaving one night, John steals \$100 from that employee's cash register.

Since respondents are likely to have worked at such low-wage jobs at some point in their lives, it should come as no surprise that the majority of respondents indicated the scenario to be realistic.²

Measures

Criminal intent

Respondents were asked to indicate the likelihood that if they were in John's position they would have stolen \$100. Response options ranged from '0' to

² All three groups actually experience some economic strain (being \$100 short). Further, while the focus is on the economic strain, it still may be the case that working at this type of job despite the \$9 wage can lead to some strain because such jobs are often characterized by negative working conditions (Agnew 2001). Thus, although our analysis compares anger and criminal intent in groups experiencing different amounts of two strain-types unmeasured in prior research, it does not examine whether people who experience strain are more likely to commit crime than those who do not experience any strain.

'10', with higher values indicating a greater offending likelihood. Although criminal intent does not necessitate actual criminal behavior, research building on Fishbein and Azjen's (1975) theory of reasoned action finds that the correlation between intentions and actual behaviors is extremely high (Fazio 1986).³ We also provide a further check of the construct validity of the intentions measure by examining the degree to which criminal intent is associated with variables that prior research has found to predict crime.⁴

Strain

We employ two measures of strain, each reflecting a different sub-type of strain resulting from the failure to achieve positively valued goals and each derived from the random conditions to which respondents were assigned. Following Agnew's argument that strain results from a disjunction between *expected* and *actual* outcomes, our first measure of strain (Frustrated Expectations) is coded '1' for those respondents who received scenario condition 2 and '0' for all others. Following Agnew's argument that strain results from a disjunction between *fair* and *actual* outcomes, our second measure of strain (Objective Inequity) is coded '1' for those respondents who received scenario condition 3 and '0' for all others. Although Agnew argues that frustrated expectations and objective inequity are both likely to promote negative emotions, the two are not identical constructs. An individual, for example, may expect and receive inequitable treatment from an employer. In this case, the individual would have experienced inequity but *not* a disjunction between expected and actual outcomes.

The experimental nature limits the range of our strain measures to '0' to '1', but these measures were designed explicitly to incorporate many of the criteria that Agnew suggests are associated with the most crime-inducing forms of strain. First, in contrast to measures of negative life events that involve many 'chance' occurrences, such as the death of a loved one, the present measures involve what Agnew (2001: 329) calls 'the voluntary and intentional violation of a relevant justice norm'. Second, whereas prior measures of injustice involve subjective perceptions of discrimination that may not be empirically valid, condition 3 involves a situation that is objectively inequitable insofar as John is described explicitly as a good employee who has been working much longer than the hypothetical boss's son. Third, each

³ Criminological research has found that the correlation between intended and actual behavior is high (Green 1989), with Pogarsky (2004) finding a strong relationship between actual deviance and hypothetical scenario intentions.

⁴ According to Shadish et al. (2002: 65), 'construct validity involves making inferences from the sampling particulars of a study to the higher-order constructs they represent'. The construct validity of our intent measure refers to how well it does or does not capture actual interpersonal differences in the probability of behavioral theft given the scenarios described above.

scenario describes a threat to John's college education, following Agnew's (2001: 335) explicit suggestion that severe strains 'threaten core goals, needs, values, activities, and/or identities'. Fourth, whereas all three scenario conditions experience some strain (e.g. being short \$100), two of the conditions experience additional strain, or what Agnew (2001: 337) terms 'an incentive for criminal coping'. Fifth, both measures involve the failure to achieve short-term money, which Agnew (2001: 343) suggests to be a core goal, easily achieved through crime.

Anger

Because measures of trait anger may attenuate the relationship between negative emotion and crime, our measure explicitly probes how angry respondents would be if they were in John's particular situation. Response categories range from '0' to '10', with higher values indicating a higher perception of situational anger.

Social support

We asked respondents about the level of social support that they perceived to be available to them from both their parents and their friends, including the degree to which their parents and friends: (1) care about their problems, (2) take time to listen when they have problems, and (3) provide good advice in times of trouble. Items each range from '1' to '4', with higher values reflecting greater social support. We then constructed two separate social support scales: a parental support scale reflecting the mean of the three parental support items, and a friend support scale reflecting the mean of the three friend support items. For both, higher values indicate higher levels of perceived social support.

Control variables

Our survey also contained items relating to other theoretical perspectives, prior delinquency, sex, and age. We utilized the 24-item Grasmick et al. (1993) self-control scale. Each item ranges from '1' to '4' and the scale reflects the mean of the constituent items, with higher values reflecting more self-control. To control for the influence of delinquent peers, a seven-item scale was used, with each item ranging from '1' to '4', and the scale reflects the mean of all seven items, with higher values indicating the presence of more delinquent peers. Additionally, a one-item indicator of certainty of punishment was included, with respondents asked: 'What are the chances that you would get caught if you did what John did?' Response options ranged from '0' to '10', with higher values indicating a greater perceived

likelihood of apprehension. We also asked respondents: 'If your friends or family found out that you stole money from your employer, how ashamed or embarrassed would you be?' Response options ranged from '0' to '10', with higher values indicating more shame. In order to control for prior delinquency, we used a seven-item scale. Each item ranges from '1' to '4' and the scale reflects the mean of all seven items, with higher values indicating more self-reported delinquent acts. Finally, we include sex (male = 0, female = 1) and the respondent's age. Descriptive statistics for all measures are presented in Table 1, and a detailed listing of all measures and scales is available upon request.

Results

Random assignment, construct validity, and scenario believability

Although not shown, an examination of the mean values of our control variables across the three strain conditions supports the assertion that we assigned conditions at random. Mean levels of these variables were very similar across

Table 1 Descriptive statistics

	<i>N</i>	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>	<i>S.D.</i>	<i>Skew</i>
Intent	438	0.00	9.00	1.43	2.13	1.74
Situational anger	438	0.00	10.00	8.06	1.98	-1.42
Condition 2 (Frustrated expectations)	438	0.00	1.00	0.33	0.47	0.74
Condition 3 (Objective inequity)	438	0.00	1.00	0.33	0.47	0.72
Age ^a	438	17.00	24.00	20.03	1.45	0.66
Sex (Female = 1)	437	0.00	1.00	0.62	0.49	-0.52
Past crime scale	437	1.00	4.00	1.67	0.50	0.93
Self-control scale	439	1.50	3.83	2.82	0.32	-0.19
Differential association scale	437	1.00	3.71	1.97	0.48	0.11
Certainty of getting caught	438	0.00	10.00	6.47	2.49	-0.59
Shame if caught	437	2.00	10.00	8.95	1.78	-2.07
Parent support scale	433	1.00	4.00	3.69	0.49	-1.82
Friend support scale	431	1.00	4.00	3.53	0.53	-0.93

Note: ^a Our questionnaire's age variable had a lower bound of 17 and an upper bound of 24. Any individuals who were under 17 therefore are coded as 17 and any individuals who were over 24 are coded as 24.

the three scenario conditions and none were significantly different across conditions. A somewhat larger difference existed among the sex compositions of the three conditions. Whereas roughly 59 percent of those in conditions 2 and 3 were female, nearly 70 percent of those in condition 1 were female; yet this difference was not statistically significant ($\chi^2 = 5.178$, $p > .05$). Results also suggest that our scenario was generally believable. When asked to rate how likely it is that a similar situation could take place in real life, the modal response was 10 of a possible 10, with only 6.8 percent of respondents reporting a believability score of less than 5. Additionally, there were no significant differences on believability scores across the three scenarios. Finally, results support the construct validity of our criminal intent measure insofar as it is correlated to a statistically significant degree with prior delinquency ($r = .35$), self-control ($r = -.31$), differential association ($r = .30$), perceived risk of being caught ($r = -.22$), sex ($r = -.23$), and shame ($r = -.36$).

Mean comparisons and Tobit models

Preliminary comparisons of criminal intent by condition (not shown) reveal that respondents in conditions 2 and 3 had a mean value of 1.49 and 1.47 in comparison with a mean of 1.35 among those in condition 1, but these differences were not significant. GST, however, also asserts that strain should be associated with situational anger and that situational anger, in turn, should be associated with crime. Supporting the former notion, further analysis reveals that those in condition 1 reported a mean anger of 7.56, likely reflecting the strain involved in not having the means to pay for college fees, but those in conditions 2 and 3 reported mean anger of 8.20 and 8.46, respectively. These differences were significant and, given random assignment, are likely caused by the discrepancy between expected and actual outcomes described in condition 2 and the inequity described in condition 3.

Given the censored nature of the anger measure, a more stringent test of strain's influence on situational anger is presented in Table 2 via Tobit regression. Model 1 demonstrates that respondents assigned to conditions 2 and 3 were significantly more likely to report higher situational anger than those assigned to condition 1. Weighting the Tobit coefficient of 0.67 for the percentage of respondents (72.4 percent) reporting anger values less than '10' indicates that being assigned to condition 2 resulted in a 0.33 point increase in the typical respondent's situational anger.⁵ Being assigned to

⁵ Our weighting algorithm applied the formula:

$$\beta_i \times \left[1 - \left(z \times \frac{f(z)}{F(z)} \right) - \frac{f(z)^2}{F(z)^2} \right],$$

condition 3 resulted in a 0.63 point increase in the typical respondent's situational anger. Model 2 examines the degree to which these results remain net of controls. Two results merit discussion. First, Model 2 suggests that the first model underestimates the relationship between both forms of strain and situational anger. The somewhat higher magnitude of the Model 2 strain coefficients likely reflects a suppression effect (Cohen and Cohen 1983: 84–91) resulting from the slightly higher proportion of males who were assigned to condition 1. Second, however, self-control fails to predict situational anger, supporting the notion that results do not simply reflect support for self-control theory's prediction that offenders tend to have 'bad tempers' deriving from (relatively) fixed interpersonal trait differences. Models 3 and 4 examine whether social support moderates the influence of conditions 2 and 3 on situational anger, and results suggest that neither friend nor parental support exerts a main effect on anger and that neither moderates the influence of condition 2 or 3 on situational anger. Nonetheless, results from all four models suggest that both strain measures are associated with situational anger. Given our experimental design, and the apparent integrity of our randomization procedure, these associations are likely causal.

Table 3 presents the results of six Tobit models testing GST's assertion that strain and situational anger predict crime. Model 1 demonstrates a positive but insignificant association between strain and criminal intent. Model 2 demonstrates that prior delinquency, self-control, the perceived certainty of getting caught, and self-reported shame for getting caught are each significantly associated with criminal intent. While results from Models 1 and 2 fail to reveal a significant association between either measure of strain and self-reported intent, Models 3 and 4 explore whether such a relationship emerges under conditions of low friend or parental support. Results fail to reveal the conditioning effects anticipated by GST. Despite a lack of support for the association between either type of strain and criminal intent, however, Model 5 reveals that situational anger is significantly associated with intent. Weighting Tobit coefficients for the percentage of respondents (48.2 percent) who reported a non-zero likelihood of engaging in theft, Model 5 demonstrates that a one standard deviation increase of 2.0 (see Table 1) in situational anger is associated with a 0.32 point increase in criminal intent.

Although self-control was not significantly associated with situational anger in Table 2, the critical distinction between situational and trait anger led

where $F(z)$ is the proportion of uncensored cases, $f(z)$ is the unit normal density (value of the derivative of the normal curve at a particular point), and z is the z -score for an area under the normal curve (Roncek 1992: 504; see also McDonald and Moffitt 1980: 319). Stata syntax available upon request.

Table 2 The relationship between strain and anger: Tobit estimates (standard errors in parentheses)

	Model 1	Model 2	Model 3 ^a	Model 4 ^{ab}
Condition 2 (Frustrated expectations)	0.67 (.30)*	0.82 (.30)**	0.81 (.30)**	0.81 (.30)**
Condition 3 (Objective inequity)	1.23 (.31)**	1.40 (.31)**	1.40 (.31)**	1.40 (.31)**
Age		0.02 (.09)	0.03 (.13)	0.03 (.13)
Sex (Female = 1)		0.13 (.28)	0.13 (.28)	0.16 (.28)
Prior delinquency scale ^c		0.36 (.35)	0.19 (.17)	0.17 (.17)
Self-control scale		−0.21 (.43)	−0.06 (.14)	−0.06 (.14)
Differential association scale		0.23 (.37)	0.09 (.18)	0.12 (.18)
Certainty of getting caught		0.07 (.05)	0.18 (.13)	0.19 (.13)
Shame if caught		0.12 (.07)	0.20 (.13)	0.21 (.13)
Parent support scale		−0.37 (.29)	−0.07 (.24)	−0.18 (.14)
Friend support scale		0.28 (.27)	0.15 (.14)	−0.06 (.24)
Condition 2 * Parent support scale			−0.25 (.30)	
Condition 3 * Parent support scale			0.02 (.33)	0.18 (.30)
Condition 2 * Friend support scale				0.41 (.32)
Condition 3 * Friend support scale				
Constant	7.88 (0.21)**	5.58 (2.5)**	7.63 (0.28)**	7.63 (0.28)**
LL	−849.01	−828.14	−827.59	−827.29
N	437.00	428.00	428.00	428.00

Notes: ^a Non-dichotomous predictors standardized prior to calculation of interaction terms and estimation.

^b We also explored whether the strain coefficient was conditioned by sex or differential association. Results failed to reveal significant interactions (analyses available upon request).

^c Because our prior crime measure asked about crime in high school for respondents of different ages, different respondents' answers might not be measuring the same thing. As such, we replicated the above models with an age*prior crime interaction. Results failed to reveal a significant interaction (results available upon request).* $p < .05$, ** $p < .01$ (one-tailed tests 6).

us to incorporate a second means of evaluating the relative merit of GST and self-control theory in Table 3. Specifically, Model 6 omits the full self-control scale and, in its place, includes the 'temper' sub-scale as a predictor. If GST is correct, situational anger should remain a significant predictor even after holding constant respondent 'trait anger'. Results reveal that the ability to control one's temper is negatively and significantly associated with criminal intent, but that situational anger remains a strong and significant predictor of intent.

Path model

Figure 1 presents the results of a path model that serves the dual purposes of replicating the above results via an alternative estimation method and summarizing the nature of the GST interrelationships examined herein. Given the similarity of the relationship between both types of strain and situational anger in Table 2, as well as the similarity of the relationships between each type of strain and intent in Table 3, Figure 1 combines these two strain categories (i.e. those who were in conditions 2 and 3 are coded '1' for a general measure reflecting strain as the failure to achieve positively valued goals, and those who were in condition 1 are coded '0' for the same measure). Included as controls are those predictors of intent that were significant in Table 3.⁶ Substantive results largely mirror those obtained from earlier models. The general measure of strain is positively associated with situational anger, situational anger is positively associated with intent, there exists no independent relationship between strain and intent, and these relationships are obtained net of controls. The model in Figure 1 fits the data adequately as indicated by several indicators of model fit.

Discussion

This research tests previously unexamined hypotheses bearing on the validity of Agnew's GST. We isolated two forms of strain that have been neglected in extant tests and operationalized these strains in the context of

⁶ To minimize the computational complexity of the estimated models, mean-aggregated scales are used as single-item indicators. Given the skew of our criminal intent and situational anger measures, we use Prelis 2 (Jöreskog and Sörbom 1993a) to compute polychoric correlations and their associated asymptotic weight matrices among the indicator variables. We then estimate our path model via Lisrel's weighted least-squares (WLS) algorithm (Jöreskog and Sörbom 1993b). Because peer delinquency was not a significant predictor in Table 3, we have omitted it from the path model. However, separate analyses including this measure replicated the results from Table 3, suggesting that, despite the significant bivariate association between our differential association scale and criminal intent, there was not a significant, independent relationship between peer delinquency and intent when other variables were held constant.

Table 3 The relationship between anger and criminal intent: Tobit estimates (standard errors in parentheses)

	Model 1 ^a	Model 2	Model 3 ^b	Model 4 ^b	Model 5	Model 6
Condition 2 (Frustrated expectations)	0.25 (.49)	-0.02 (.42)	-0.01 (.42)	-0.02 (.42)	-0.32 (.41)	-0.46 (.41)
Condition 3 (Objective inequity)	0.30 (.49)	-0.05 (.42)	-0.05 (.42)	-0.05 (.42)	-0.48 (.41)	-0.58 (.42)
Age		-0.11 (.12)	-0.16 (.18)	-0.17 (.18)	-0.10 (.12)	-0.13 (.12)
Sex (Female = 1)		-0.36 (.38)	-0.35 (.38)	-0.33 (.37)	-0.41 (.36)	0.61 (.36)*
Prior delinquency scale ^c		1.49 (.46)**	0.73 (.23)**	0.73 (.19)**	1.37 (.44)**	1.44 (.45)**
Self-control scale		-2.33 (.60)**	-0.77 (.19)**	-0.73 (.19)**	-2.22 (.58)**	
Differential association scale		0.45 (.50)	0.24 (.24)	0.23 (.24)	0.41 (.48)	0.73 (.49)
Certainty of getting caught		-0.16 (.07)*	-0.40 (.18)*	-0.40 (.18)*	-0.19 (.07)**	-0.19 (.07)**
Shame if caught		-0.50 (.10)**	-0.89 (.17)**	-0.90 (.17)**	-0.53 (.09)**	-0.55 (.10)**
Parent support scale		0.13 (.40)	-0.05 (.34)	0.05 (.19)	0.26 (.39)	0.19 (.39)
Friend support scale		0.10 (.37)	0.06 (.20)	-0.33 (.33)	-0.02 (.36)	-0.03 (.36)
Condition 2 * Parent support scale			0.32 (.42)			
Condition 3 * Parent support scale			-0.09 (.45)			
Condition 2 * Friend support scale				0.50 (.42)		
Condition 3 * Friend support scale				0.56 (.43)		
Situational anger					0.45 (.09)**	0.46 (.10)**
Temper control scale						-0.64 (.32)*

Table 3 (Continued)

Table 3 (Continued)

	Model 1 ^a	Model 2	Model 3 ^b	Model 4 ^b	Model 5	Model 6
Constant	-0.32 (0.36)	10.34 (3.40)**	0.19 (0.40)	0.18 (0.40)	7.11 (3.34)*	3.16 (3.15)
LL	-731.34	-654.31	-653.72	-653.29	-641.71	-647.15
N	437.00	429.00	429.00	429.00	428.00	428.00

Notes: ^a We also explored whether the strain coefficients were conditioned by sex or differential association. Results failed to reveal significant interactions (analyses available upon request).

^b Non-dichotomous predictors standardized prior to calculation of interaction terms and estimation.

^c Because our prior crime measure asked about crime in high school for respondents of different ages, different respondents' answers might not be measuring the same thing. As such, we replicated the above models with an age*prior crime interaction. Results failed to reveal a significant interaction (results available upon request).

* $p < .05$, ** $p < .01$ (one-tailed tests).

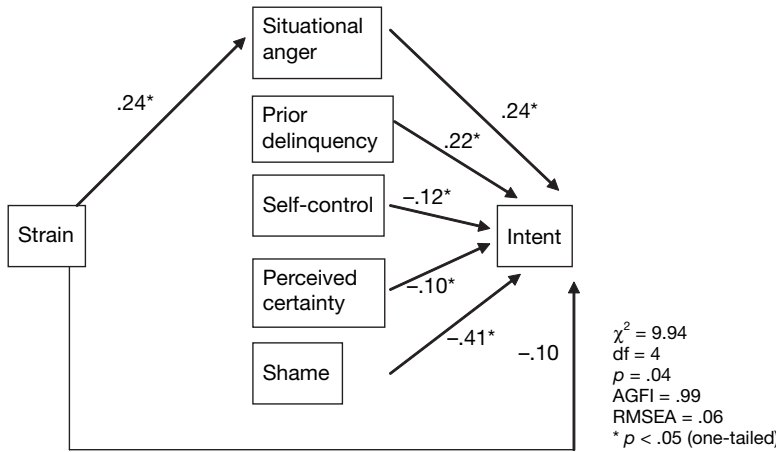


Figure 1 Strain, situational anger, and criminal intent ($N = 435$).

Note: Correlations among situational anger, past crime, self-control, perceived certainty, and shame were estimated but are omitted for presentational clarity.

a vignette study. Next, we examined the relationships among these strains, situational anger, and criminal intent in the first experimental test of GST.

Overview of findings

Results were mixed. On one hand, two separate estimation methods yield support that (1) these types of strain are associated with situational anger, (2) situational anger is associated with a greater likelihood of engaging in crime, and (3) these findings remain net of adjustments for self-control. However, results fail to support the prediction that these relationships are conditioned by social support.

This study makes several contributions to the literature. First, although research suggests that stressful life events may promote crime, such events often have little to do with the socioeconomic issues that served as the foundation of Merton's (1938) original theory. Agnew explicitly argues that goals such as money are central to much crime and that mainstream criminology prematurely dismissed the importance of strains resulting from the failure to achieve expected and equitable economic outcomes. This study provides the first experimental test of these assertions, with results evincing promising support for Agnew's hypotheses.

Second, given the robust and strong relationship that the present analyses unveil between situational anger and criminal intent, results call into question the assertions of Gottfredson and Hirschi (1990) concerning

the role of emotion in crime. Such theorists view negative emotions such as anger merely as indicators of a relatively fixed inability to delay immediate gratification. GST views negative emotion as a concept that exhibits meaningful variation both across *and* within individuals, contingent on situational strain. Gottfredson and Hirschi predict that situational anger will be highly correlated with self-control and, by extension, that it will bear no independent relation to crime when self-control is held constant. Conversely, GST predicts that situational anger will share minimal variance with self-control and that the former will be strongly associated with crime net of controls for the latter. The results provide the first explicit test of these competing assertions and, across estimation method, support GST. Moreover, whereas prior research has focused on the relationship between anger and violence – despite research suggesting that violence and property crime may be distinct constructs (Rebellion and Waldman 2003) – our research provides evidence that situational anger may be related to property crime.

Third, the present study demonstrates the utility of employing experimental methods to test GST. The failure of prior research to examine the relationship between frustrated expectations (as opposed to frustrated aspirations) and crime may stem from the difficulty involved in producing operational definitions of a disjunction between expected and actual outcomes. Such disjunctions may occur infrequently, may be difficult to describe in the context of a typical survey, or may not be accurately recalled. Vignette methods offer a simple means of providing variation in such disjunctions. Researchers need not devise questions attempting to explain what they mean by a ‘disjuncture between expected and actual outcomes’. Rather, researchers can construct scenarios that involve greater or lesser degrees of such strain and measure each respondent’s reaction to them. Beyond this, the experimental method offers different but complementary strengths. Although the present methodology leaves open the generalizability of its findings, its random assignment procedure set constant those variables that might render spurious the associations between strain and anger and between anger and criminal intent.

Fourth, all but one of the models predicting situational anger and criminal intent fail to identify a sex effect. The fact that males and females do not differ with regard to anger is consistent with extant research (Beutel and Marini 1995; Piquero and Sealock 2004), and the finding that males and females do not differ with regard to minor theft is also consistent with prior research (Steffensmeier and Allan 1996), showing that most sex differences emerge among more serious crimes. Nonetheless, as Broidy and Agnew (1997) have argued, although the GST framework may be similar for males and females, there may be subtle but important differences in the causal paths. Unfortunately, research assessing sex differences in GST is

limited and based on select samples such that making any summary statement is premature (Piquero and Sealock 2004).

Limitations

We take care to note several other limitations. First, although we did perform an experimental manipulation of the degree to which strain was associated with situational anger, our examination of the relationship between situational anger and criminal intent is correlational. Thus, it remains possible that the relationship between situational anger and criminal intent is spurious. Second, we remind readers that the vignette methodology is not a substitute for real-world investigation. Given that GST predicts one's *own* strain to promote situational anger whereas our vignette asks respondents about *another's* hypothetical failure to achieve expected/fair outcomes, the construct validity of our experimental manipulation remains an open question.⁷ Given that experiencing strain first-hand likely triggers stronger physiological reactions than does reading about someone else's hypothetical strain, we cannot be certain that the results reflect the influence of strain on situational anger per se. Third, despite the observed correlation between prior and intended criminal behavior, we have no guarantee that all respondents would actually behave as they report that they would.

Future research directions

In light of these limitations in hand, we suggest several avenues of future research. First, the relationship between crime and other forms of under-researched strain should be investigated. Agnew suggests that research should attempt to isolate the relationship between crime and individual forms of strain involving injustice, high magnitude, an incentive for criminal coping, and low social control. Further, he suggests that scales incorporating multiple strain items be calculated based only on those measures of strain that are first found to be correlated with crime. We have presented one test of the degree to which frustrated economic expectations and objective inequity promote anger, but there exist other forms of these strains both inside and outside an economic context (e.g. by friends or relatives).

⁷ Recall that our respondents were asked to place themselves in the vignette and imagine that what happened to the character in the scenario also happened to them. Reading a story may not elicit the exact same psychological effect as experiencing the strain first-hand. Although the respondents rated the scenario as highly believable, we did not directly assess respondents' own experiences with strain. Results regarding the totality of strain's effects should be regarded as tentative, pending future confirmation.

Second, subsequent research should expand measures of strain. For example, experimental vignettes might include 10 separate conditions, each involving an incrementally higher disjunction between expected and actual outcomes. We should emphasize that, despite some results supportive of GST, we found no significant relationship between strain and criminal intent. This may have resulted from the actual nature of the relationship between these types of strain and crime but may also have resulted from the limited range of our strain measures.

Third, further research should explore new methodologies with which to test GST's predictions more rigorously. Studies could embed vignettes of different conditions within survey questionnaires. Such a design would allow for the simultaneous collection of data concerning strains related to negative life events and strains related to frustrated expectations. The same design could also allow for the benefits of a randomized experiment in the context of a random-sample survey.

Ultimately, studies of GST would also benefit by moving into the manipulation of strain in laboratories. Such designs have a key advantage in that researchers can manipulate stress/strain across individuals and then obtain estimates of negative emotions and crime. Although this has yet to be conducted within the GST literature, such designs have been employed more generally in the social sciences (Berkowitz and Thome 1987; Nathanson and Saywitz 2003; Shiloh et al. 2003) and offer a fruitful avenue for further research.

References

- Adams, J. S. (1963). Toward an understanding of inequity. *Journal of Abnormal and Social Psychology* 67, 422–36.
- Agnew, R. (1989). A longitudinal test of the revised strain theory. *Journal of Quantitative Criminology* 5, 373–87.
- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology* 30, 47–87.
- Agnew, R. (2001). Building on the foundation of general strain theory: Specifying the types of strain most likely to lead to crime and delinquency. *Journal of Research in Crime and Delinquency* 38, 319–61.
- Agnew, R. (2006). *Pressured into crime: An overview of General Strain Theory*. Los Angeles, CA: Roxbury Publishing.
- Agnew, R. and White, H. R. (1992). An empirical test of General Strain Theory. *Criminology* 30, 475–99.
- Agnew, R., Cullen, F., Burton, T. V., Evans, D. and Dunaway, R. G. (1996). A new test of classic strain theory. *Justice Quarterly* 13, 681–704.
- Aseltine, R.H., Jr, Gore, S. and Gordon, J. (2000). Life stress, anger and anxiety, and delinquency: An empirical test of General Strain Theory. *Journal of Health and Social Behavior* 41, 256–75.

- Baron, S. W. (2004). General strain, street youth, and crime: A test of Agnew's revised theory. *Criminology* 42, 457–83.
- Baron, S. W. and Hartnagel, T. F. (2002). Street youth and labor market strain. *Journal of Criminal Justice* 30, 519–33.
- Berkowitz, L. and Thome, P. R. (1987). Pain expectation, negative affect, and angry aggression. *Motivation and Emotion* 11, 183–93.
- Beutel, A. and Marini, M. (1995). Gender and values. *American Sociological Review* 60, 436–48.
- Brezina, T. (1996). Adapting to strain: An examination of delinquent coping responses. *Criminology* 34, 39–59.
- Broidy, L. M. (2001). A test of General Strain Theory. *Criminology* 39, 9–36.
- Broidy, L. M. and Agnew, R. (1997). Gender and crime: A General Strain Theory perspective. *Journal of Research in Crime and Delinquency* 34, 275–306.
- Burton, V., Cullen, F. T., Evans, D. and Dunaway, R. G. (1994). Reconsidering strain theory: Operationalization, rival theories, and adult criminality. *Journal of Quantitative Criminology* 10, 213–39.
- Capowich, G. E., Mazerolle, P. and Piquero, A. (2001). General Strain Theory, situational anger, and social networks: An assessment of conditioning influences. *Journal of Criminal Justice* 29, 445–61.
- Cernkovich, S. A. and Giordano, P. C. (1979). Delinquency, opportunity, and gender. *Journal of Criminal Law and Criminology* 70, 145–51.
- Cernkovich, S. A., Giordano, P. C. and Rudolph, J. L. (2000). Race, crime, and the American dream. *Journal of Research in Crime and Delinquency* 37, 131–8.
- Cloward, R. A. and Ohlin, L. (1960). *Delinquency and opportunity*. New York: Free Press.
- Cohen, A. K. (1955). *Delinquent boys: The culture of the gang*. Glencoe, IL: Free Press.
- Cohen, J. and Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*, 2nd edn. Hillsdale, NJ: Erlbaum.
- DeCoster, S. and Heimer, K. (2001). The relationship between law violation and depression: An interactionist approach. *Criminology* 39, 799–836.
- Eitle, D. J. (2002). Exploring a source of deviance-producing strain for females: Perceived discrimination and General Strain Theory. *Journal of Criminal Justice* 30, 429–42.
- Eitle, D. J. and Turner, R. J. (2002). Exposure to community violence and young adult crime: The effects of witnessing violence, traumatic victimization, and other stressful life events. *Journal of Research in Crime and Delinquency* 39, 214–37.
- Eitle, D. J. and Turner, R. J. (2003). Stress exposure, race, and young adult male crime. *Sociological Quarterly* 44, 243–69.
- Farnworth, M. and Leiber, M. (1989). Strain theory revisited: Economic goals, educational means, and delinquency. *American Sociological Review* 55, 236–79.
- Fazio, R. H. (1986). How do attitudes guide behavior? In R. M. Sorrentino and E. T. Higgins (eds) *The handbook of motivation and cognition: Foundations of social behavior*, 204–43. New York: Guilford.
- Fishbein, M. and Ajzen, I. (1975). *Belief, attitude, intention, and behavior*. Reading, MA: Addison-Wesley.
- Gottfredson, M. R. and Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.

- Grasmick, H. G., Tittle, C. R., Bursik, R. J., Jr and Arneklev, B. J. (1993). Testing the core empirical implications of Gottfredson and Hirschi's General Theory of Crime. *Journal of Research in Crime and Delinquency* 30, 5–29.
- Green, D. (1989). Measures of illegal behavior in individual-level deterrence research. *Journal of Research in Crime and Delinquency* 26, 253–95.
- Hagan, J. and Foster, H. (2003). S/he's a rebel: Toward a sequential stress theory of delinquency and gendered pathways to disadvantage in emerging adulthood. *Social Forces* 82, 53–86.
- Hagan, J. and McCarthy, B. (1997). *Mean streets: Youth crime and homelessness*. Cambridge: Cambridge University Press.
- Hay, C. (2003). Family strain, gender, and delinquency. *Sociological Perspectives* 46, 107–35.
- Hegtvædt, K. A. (1990). The effects of relationship structure on emotional responses to inequity. *Social Psychology Quarterly* 53, 214–28.
- Hoffmann, J. P. and Cerbone, F. G. (1999). Stressful life events and delinquency escalation in early adolescence. *Criminology* 37, 343–73.
- Hoffmann, J. P. and Miller, A. S. (1998). A latent variable analysis of General Strain Theory. *Journal of Quantitative Criminology* 14, 83–110.
- Jensen, G. F. (1995). Salvaging structure through strain: A theoretical and empirical critique. In F. Adler and W. S. Laufer (eds) *The legacy of anomie theory*, 139–58. New Brunswick, NJ: Transaction Publications.
- Jöreskog, K. and Sörbom, D. (1993a). *PRELIS 2 user's reference guide*. Chicago, IL: Scientific Software International.
- Jöreskog, K. and Sörbom, D. (1993b). *LISREL 8 user's reference guide*. Chicago, IL: Scientific Software International.
- Kim, K. J., Conger, R. D., Elder, G. H., Jr and Lorenz, F. O. (2003). Reciprocal influences between stressful life events and adolescent internalizing and externalizing problems. *Child Development* 74, 127–43.
- McDonald, J. F. and Moffitt, R. A. (1980). The uses of Tobit analysis. *Review of Economics and Statistics* 62, 318–21.
- Mazerolle, P. and Maahs, J. (2000). General strain and delinquency: An alternative examination of conditioning influences. *Justice Quarterly* 17, 753–78.
- Mazerolle, P. and Piquero, A. R. (1997). Violent responses to strain: An examination of conditioning influences. *Violence and Victims* 12, 323–43.
- Mazerolle, P. and Piquero, A. R. (1998). Linking exposure to strain with anger: An investigation of deviant adaptations. *Journal of Criminal Justice* 26, 195–211.
- Mazerolle, P., Piquero, A. R. and Capowich, G. E. (2003). Examining the links between strain, situational and dispositional anger, and crime. *Youth and Society* 35, 131–57.
- Merton, R. K. (1938). Social structure and anomie. *American Sociological Review* 3, 672–82.
- Nathanson, R. and Saywitz, K. J. (2003). The effects of the courtroom context on children's memory and anxiety. *Journal of Psychiatry & Law* 31, 67–98.
- Paternoster, R. and Mazerolle, P. (1994). General Strain Theory and delinquency: A replication and extension. *Journal of Research in Crime and Delinquency* 31, 235–63.
- Pearlin, L. I. (1989). The sociological study of stress. *Journal of Health and Social Behavior* 30, 241–56.

- Piquero, A. R., Gomez-Smith, Z. and Langton, L. (2004). Discerning unfairness where others may not: Low self-control and unfair sanction perceptions. *Criminology* 42, 699–733.
- Piquero, N. L. and Sealock, M. D. (2000). Generalizing General Strain Theory: An examination of an offending population. *Justice Quarterly* 17, 449–84.
- Piquero, N. L. and Sealock, M. D. (2004). Exploring general strain: Gender and coping skills in an offender population. *Justice Quarterly* 21, 125–58.
- Pogarsky, G. (2004). Projected offending and contemporaneous rule violation: Implications for heterotypic continuity. *Criminology* 42, 111–35.
- Rebellon, C. J. and Waldman, I. (2003). Deconstructing ‘force’ and ‘fraud’: An empirical assessment of the generality of crime. *Journal of Quantitative Criminology* 19, 303–31.
- Robbers, M. L. P. (2004). Revisiting the moderating effect of social support on strain: A gendered test. *Sociological Inquiry* 74, 546–69.
- Roncek, D. W. (1992). Learning more from Tobit coefficients – Extending a comparative-analysis of political protest. *American Sociological Review* 57, 503–7.
- Shadish, W. R., Cook, T. D. and Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin.
- Shiloh, S., Sorek, G. and Terkel, J. (2003). Reduction of state-anxiety by petting animals in a controlled laboratory experiment. *Anxiety, Stress & Coping: An International Journal* 16, 387–95.
- Sigfusdottir, I., Farkas, G. and Silver, E. (2004). The role of depressed mood and anger in the relationship between family conflict and delinquent behavior. *Journal of Youth and Adolescence* 33, 509–22.
- StataCorp (2003). *Stata statistical software: Release 8*. College Station, TX: StataCorp LP.
- Steffensmeier, D. and Allan, E. (1996). Gender and crime: Toward a gendered theory of female offending. *Annual Review of Sociology* 22, 459–87.
- Van Gundy, K. (2002). Gender, the assertion of autonomy, and the stress process in young adulthood. *Social Psychology Quarterly* 65, 346–63.

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