Street youth and labor market strain

Stephen W. Baron\textsuperscript{a,}\textsuperscript{*}, Timothy F. Hartnagel\textsuperscript{b}

\textsuperscript{a}Department of Sociology, Queen’s University, Kingston, Ontario, Canada K7L 3N6
\textsuperscript{b}Department of Sociology, University of Alberta, Edmonton, Alberta, Canada

Abstract

This article applies strain theory to a high-risk sample of homeless street youth, with a particular focus upon labor market strain to predict violent and property crime and substance use. Data were collected through interviews with 200 street youth in a western Canadian city. Labor market strain was found to be related to the frequency of the youth’s property, violent, and total crimes. Criminal peers and norms were also related to these crimes, as well as to drug use. Results also revealed a significant interaction effect between labor market strain and criminal norms predicting property, violent, and total crime. Interactions between strain and criminal peers, and external attributions also predicted property crime. Contrary to predictions, emotions were unrelated to crime and drug use. The results are discussed in light of Agnew’s revised strain theory and suggestions are offered for future research on this topic.

Introduction

After a period of relative neglect, in part the result of theoretical critiques (Kornhauser, 1978) and empirical inadequacies (Akers, 1994), strain theory (Cloward & Ohlin, 1960; Cohen, 1955; Merton, 1938) has experienced a revival (Adler & Laufer, 1995; Passas & Agnew, 1997). Recent work ranges from a focus on the structural aspects of the theory (Bernard, 1987; Messner & Rosenfeld, 1994), to Agnew’s (1985, 1992, 1995) revised social psychological version. While past research focused with disappointing results on the disjunction between aspirations and expectations as the source of delinquency-producing strain, Agnew adopts a broader approach that emphasizes how negative relations create pressure towards delinquency. He also draws attention to intervening affective states, particularly anger, and various conditioning factors that should affect the choice of delinquent versus nondelinquent adaptations. The limited research testing Agnew’s general strain theory (Agnew, 1985; Agnew & Raskin White, 1992; Broidy, 2001; Hoffman & Miller, 1998; Hoffman & Su, 1997; Mazzerolle, 1998; Mazzerolle, Burton, Cullen, Evans, & Payne, 2000; Mazzerolle & Maahs, 2000; Mazzerolle & Piquero, 1998; Paternoster & Mazzerolle, 1994; Piquero & Sealock, 2000) has provided some support. Most of these works, however, have been limited to samples of fairly conventional school-age adolescents (although see Piquero & Sealock, 2000) and have tended to focus on exposure to negative events rather than the failure to achieve positively valued goals (although see Broidy, 2001; Mazzerolle & Piquero, 1998).

This article applies aspects of strain theory to a higher-risk sample of older homeless street youth. Since different types of strain may be relevant to different subgroups (Agnew, 1992), the article focuses upon occupational strain as represented by labor market problems experienced by street youth. In addition, it examines intervening mechanisms of attri-
butions and negative emotions as well as some suggested conditioning factors affecting the choice of adaptation.

**Theory**

The classic strain theories of Cloward and Ohlin (1960), Cohen (1955), and Merton (1938) argue that delinquency results from the failure to obtain goals through legitimate activity. Merton claimed that there were general cultural goals of success or achievement in North America, but socially structured differences by class background in the availability of legitimate opportunities to obtain these goals. The strain thereby generated motivates individuals to seek alternative means of goal achievement, which may include criminal behavior. Cloward and Ohlin emphasized the goal of economic success and the role of delinquent subcultures in providing opportunities for adolescents experiencing goal blockage to learn and perform delinquent responses. Their particular contribution was to elaborate on how strain can begin a complex interactive and dynamic process leading some youths to pursue collective delinquent solutions (Hoffman & Ireland, 1995).

Classic strain theory has generated a good deal of research, much of which has correlated strain, measured by the discrepancy between occupational or educational aspirations and expectations, and delinquency with generally weak results (Agnew, 1985; Burton & Cullen, 1992; Farnworth & Leiber, 1989; Hoffman & Ireland, 1995). These studies typically report that delinquency is highest when both aspirations and expectations are low (Agnew, 1985). Alternative measures of strain, such as the disjunction of economic goals and educational means (Farnworth & Leiber, 1989) or perceived blocked opportunities and feelings of relative deprivation (Burton & Cullen, 1992; Burton, Cullen, Evans, & Dunaway, 1994), have shown stronger support for the theory, although some of these results disappear with controls for measures of competing theories such as social control and differential association. Hoffman and Ireland (1995), however, claim that few studies examine the interactive propositions of Cloward and Ohlin’s (1960) strain theory, which cannot be adequately assessed by only examining the direct effects of strain on delinquency.

Theoretical and empirical critiques (e.g., Burton & Cullen, 1992; Burton et al., 1994; Farnworth & Leiber, 1989; Hirschi, 1969; Kornhauser, 1978) led to some revision of the early strain theories. The assumption that economic success or middle class status is the primary goal of adolescents has been challenged (Agnew, 1985) and attempts have been made to identify alternative goals, particularly more immediate goals thought to be characteristic of adolescents (Coleman, 1961; Elliott & Voss, 1974; Greenberg, 1977; Maxwell, 1966; Quicker, 1974). The research evidence, however, has not been particularly supportive (Agnew, 1984, 1995; Akers, 1994).

More recently, Agnew (1992) proposed a more general theory of strain emphasizing negative relations with others. There are three major types of negative relations or strain: those that prevent or threaten to prevent the achievement of positively valued goals; those that remove or threaten to remove positively valued stimuli; and those that present or threaten to present noxious or negatively valued stimuli. The first type of strain has been the focus of criminological research, typically measured as the disjunction between aspirations and expectations, with poor empirical results (Akers, 1994; Burton & Cullen, 1992). In light of this, Agnew argues that this type of strain would be better measured in terms of the disjunctions between expectations and actual outcomes, or between the perceived fairness of outcomes and actual outcomes.

Strain increases the likelihood that individuals will experience such negative emotions as fear, depression, disappointment, and anger/frustration, with the latter thought to be especially important for delinquency and crime. Agnew (1992) suggests that anger results from strain when people blame their adversity on others. This negative affect creates pressure for some type of corrective action and delinquency/crime may be one response. It may take an instrumental form as a means for reducing strain, that is, as a means for achieving positively valued goals, for protecting or retrieving positive stimuli, or for terminating or escaping from negative stimuli (Agnew, 1995). Delinquency may also be used as retaliation against the perceived sources of strain or take an escapist form as individuals attempt to manage their negative affect by illicit drug use. The theory is, therefore, applicable to a variety of different types of delinquency/crime.

Agnew (1992) recognizes that delinquency/crime is only one possible response to strain and identifies several conditions that affect the choice of delinquent versus nondelinquent adaptations. These conditions include the availability of delinquent peers, level of self-efficacy, presence of conventional social support, strength of moral inhibitions, and degree of self-control. This is similar to some of the conditions identified by Cloward and Ohlin (1960) as necessary for the development of collective patterns of delinquency, particularly the weakening of commitment and belief in conventional codes of conduct, joining with others to develop solutions to adjustment prob-
lems, and managing guilt and fear (Hoffman & Ireland, 1995). Central to the general theory, then, is the specification of a set of interactions between negative relations or strain, negative affect, and factors affecting the disposition to and constraints on delinquency.

In an early partial test of his general strain theory using a national sample of boys, Agnew (1985) found that living in an aversive family or school environment had a direct effect on delinquency, along with indirect effects through anger, even after social control and subcultural deviance variables were controlled. More recently, utilizing longitudinal data on adolescent alcohol and drug use, Agnew and Raskin White (1992) found that a composite measure of strain had the predicted effect on delinquency and drug use in the cross-sectional analysis; this effect was comparable to that of social control and social learning variables. The effect of strain was greater for those adolescents with a greater number of delinquent friends and with a low level of self-efficacy. These conditional effects, however, were not observed when a longitudinal analysis was conducted.

Several recent studies have shown partial support for Agnew’s general theory. This research focuses primarily on the presentation of negative stimuli and indicates that negative family, school or neighbourhood environments, or stressful life events are predictive of various types of deviance (Broidy, 2001; Hoffman & Miller, 1998; Hoffman & Su, 1997; Mazzerolle, 1998; Mazzerolle et al., 2000; Mazzerolle & Maahs, 2000; Mazzerolle & Piquero, 1998; Paternoster & Mazzerolle, 1994; Piquero & Sealock, 2000). In one of the few studies to examine strain as the failure to achieve positive goals, Paternoster and Mazzerolle (1994) failed to find support for the link between strain, as measured by expected success in obtaining employment and education, and crime. In one of the few studies to incorporate all three types of strain, Mazzerolle and Piquero (1998) found that the failure to achieve positively valued goals, as measured by education, was the only measure of strain to predict deviant behavior, but it was restricted to the intention to use violence. Broidy (2001), also utilizing multiple measures of strain, found no significant link between either blocked goals or perceptions of fairness and criminal behavior. These two studies differed somewhat from the others in utilizing university students for their samples. Most of the other research works focused on conventional school-aged youths and only the work by Piquero and Sealock (2000) utilized a group of high-risk offenders.

The results regarding the conditioning effects of moral beliefs, delinquent peers, self-efficacy, conventional social support, and social control have been mixed. Contrary to predictions, Paternoster and Mazzerolle (1994) reported that only self-efficacy had a conditioning effect on strain and it was in the direction opposite of expectations. Mazzerolle and Maahs (2000) found support both cross-sectionally and longitudinally for the conditioning influences of peers and moral beliefs on strain. Hoffman and Miller (1998) failed to find support for a conditional impact of self-esteem, self-efficacy, or delinquent peers while Mazzerolle et al. (2000) found support for the conditional impact of social bonds and deviant affiliations for drug use.

Support for the link between anger and strain is also mixed. Mazzerolle and Piquero (1998) showed that the failure to achieve positively valued educational goals was related to anger, which in turn was related to the intention to use violence, but not other types of offenses including property crime. Mazzerolle et al. (2000) found that anger was not a significant predictor of violent delinquency, nor did it predict school deviance or drug use. Piquero and Sealock (2000) reported that anger was related to violent crime but not to property crime. This study also examined depression but failed to find a significant relationship between this emotion and criminal behavior. Broidy (2001) reported a relationship between strain-induced anger and crime. Her results, however, also indicated that different types of strain were related to anger in different ways with the failure to achieve a positively valued goal-reducing anger, and perceptions of unfair outcomes increasing anger.

In sum, while there is partial support for the theory, there appears to be some questions about the conditional effects of such variables as delinquent peers, self-efficacy, and social support and the hypothesized intervening variable of negative emotions. Further, this past work had not examined the potentially crucial role of attributions and affect in producing delinquency/crime and had not typically focused on the failure to achieve positively valued goals.

Hoffman and Ireland (1995) recently elaborated on the work of Cloward and Ohlin (1960) by proposing dynamic and reciprocal interaction among actual and perceived strain, external attribution of blame, delinquent peers, and anger that is similar to Agnew’s (1992) revised theory. Strain leads to, and is conditioned by, external attributions of blame, both of which, in turn, affect and are affected by peer groups. Strain and externalization of blame produce anger, which then leads to delinquent activities. These authors also argue that delinquency reinforces associations with delinquent peers, a weakening of legitimacy of conventional norms, and a dissipation of guilt feelings in a reciprocal fashion. To date, no research has tested their elaborated strain model.
Research issues

Most of the research works on strain theory were limited to samples of school-age (but see Broidy, 2001; Mazzerolle & Piquero, 1998) conventional samples (but see Piquero & Sealock, 2000). It should, however, apply to older youths, particularly those at greater risk for more extensive and serious involvement in criminal behavior (Burton & Cullen, 1992). It may also be the case that different types of strain are relevant to different subgroups (Agnew, 1992).

Street youth, who have left school and “hang out” on the street on a regular or permanent basis (Hagan & McCarthy, 1997a, 1997b; McCarthy & Hagan, 1991; Radford, King, & Warren, 1989; Smart, Adlaf, Porterfield, & Canale, 1990), are particularly at risk for serious and persistent problems of economic adversity, crime, and substance abuse (Brennan, Huizinga, & Elliott, 1978; Hagan & McCarthy, 1997a, 1997b; Janus, McCormack, Burgess, & Hartman, 1987; Kufeld & Nimmo, 1987a, 1987b; Palenski, 1984; Radford et al., 1989; Rothman, 1991; Smart et al., 1990) Most are under/unemployed, often lack a permanent residence, and spend significant amounts of time without shelter. Their lives are characterized by poverty, hunger, and other conditions of extreme deprivation (Hagan & McCarthy, 1992, 1997a, 1997b; Kufeldt & Nimmo, 1987a, 1987b; McCarthy & Hagan, 1992; Palenski, 1984; Webber, 1991).

Little research explored what aspects of street life lead to criminal behavior. Hagan and McCarthy (1997) note that North American criminology tended to neglect youth on the street. They argue that this practice has limited the study of more extreme economic and social situations that might lead to criminal behavior. There is evidence that street youths’ unemployment (Hagan & McCarthy, 1992, 1997a, 1997b; Kufeldt & Nimmo, 1987a, 1987b; McCarthy & Hagan, 1992; Palenski, 1984; Webber, 1991) and their perceptions of and reactions toward their labor market experiences (Baron & Hartnagel, 1997) influence criminal behavior. Hagan and McCarthy suggest that the street limits the development of legitimate pathways for future life opportunities within this population, leading them to capitalize on crime. The present research focuses upon occupational strain or labor market problems among street youth as a hypothesized motivating source of their criminal behavior. This appears to be an example of Agnew’s first type of strain: the failure to achieve positively valued goals. That is, those street youths who experience a gap or disjunction between their labor market expectations and their actual achievements experience strain and are thus motivated to resolve it in some fashion.

While Agnew’s (1992) general theory hypothesizes that crime is more likely when strain results in anger due to blaming the strain on external causes, he does not distinguish instrumental, retaliatory, and escapist criminal responses. All three types of crime are simply regarded as different means for coping with strain and its accompanying negative emotions. Other strain theorists, however, (e.g., Box, 1987; Cloward & Ohlin, 1960; Merton, 1938; Stack, 1984) suggested that those who ascribe their labor market difficulties to external causes or injustice in the social system are more likely to retaliate with predatory property and/or violent crime rather than drug use. Despite its importance in both classic and revised strain theories, there has been little research exploring attributions and crime (see Baron & Hartnagel, 1997). Consequently, the potential interactions among strain, attributions, and anger in influencing the type of criminal response will be investigated.

Hypotheses

The above discussion can be summarized by specifying several hypotheses that will be tested with data from a sample of street youth. First of all, it is expected that strain will be directly related to crime and substance use net of other predictors. Street youth who experience more labor market strain should report more crime and substance use.

Secondly, street youth who attribute their labor market problems to external sources and who are angry about these problems will report more crime.

Third, the revised theory of strain predicts that attributions and emotions will interact with strain to affect the response. In particular, it is expected that violent and property crime, but not drug use, will occur more frequently among those street youths who experience greater labor market strain, attribute it to external sources, and are angry about it.

Finally, the revised theory predicts that several variables should condition the effect of strain on deviance. It is expected that there are a series of interactions between strain and involvement with delinquent peers, moral inhibitions, conventional commitments, and self-efficacy. The relationship of strain with crime and substance use should be greatest among street youth who have the support of delinquent/substance-using peers, fewer moral inhibitions, conventional commitments, and a lower sense of self-efficacy.

Methods

Street youth usually refers to youths who have run away or been expelled from their homes and/or who
spend some or all of their time in various public locations. Past research suggested that the street population was made up of a heterogeneous group of youths from preteens to mid-twenties. The street is populated by students and dropouts, employed and unemployed youths, regulars who “hang out” on the street on a permanent basis, and those whose presence is sporadic. Whitbeck and Hoyt (1999) note that the term “street youth” may be used to refer to people who hang out on the streets and who may or may not have homes to return to at night (see also Shane, 1996). They argue that these are largely unsupervised young people who may be essentially on their own regardless of having the choice to return home at night.

Recognizing the heterogeneity of this population, two hundred male respondents were identified based on four sampling criteria:

1. Participants must be male.
2. They must be aged twenty-four and under.
3. They must have left or finished school.
4. They must spend at least three hours a week “hanging around” on the street or in a mall.

The rationales for these criteria were (1) to avoid the potential ethical and methodological problems of a male researcher inquiring about intimate areas of female respondents’ lives (sexual abuse, sexual assault, and prostitution); (2) to cover the age range of those described as street youth (Caputo & Ryan, 1991); (3) to eliminate those not eligible for full-time employment; and (4) to obtain a sample of “serious” “at-risk” youth and avoid the “weekend warriors.” While criterion four left the door open for the inclusion of respondents who spent minimal time on the street, it is important to note that the data show that the bulk of the sample was on the street full time. When asked, “How many months in the last year did you live in a shelter or have no fixed address?”, the average respondents reported they were homeless about four months. Only fifteen respondents lived at home for all of the previous twelve months.

Data collection

The data were collected over a six-month period from January through June of 1993 in Edmonton, Alberta, a large western Canadian city (Canada’s fifth largest) with a population of 800,000. In this period and setting, the labor market was extremely difficult for those under twenty-four, with the unemployment rate reaching 20.2 percent in 1993 (Statistics Canada, 1993a, 1993b). The crime rate for the area in 1993 was 10,681/100,000, a number somewhat higher than the national average of 9,516/100,000 (Statistics Canada, 1994). The study took place in and around the downtown business core of the city bordered by the local skid row and “inner city.” The area contained a mix of commercial and financial establishments surrounded by bars, pawnshops, hotels, shelters, detox centers, rooming houses, rundown residential units, and abandoned buildings.

Sample selection began with the interviewer situating himself in geographical areas known to be frequented by street youth. Potential respondents were approached, alerted to the project, and screened for study eligibility. Those youth meeting the selection criteria were then provided more information and asked to participate.1 Youths were then taken to one of the mall food courts in the downtown core to be interviewed. Interviews averaged an hour and ten minutes in length and respondents were awarded ten dollars in food coupons at a popular fast food restaurant for participation. As Whitbeck and Hoyt (1999) note, there is a limited amount of productive interview time with this population. Thus, lengthening the interview process might have stretched the parameters of valid responses. For this reason, the interviewers did not have multiple indicators for some of the concepts and noted the need for caution when interpreting the results.

Additional contacts were initiated by youths who had learned of the researcher’s presence and solicited interviews or through introductions from previously interviewed members. Further information was gathered by spending parts of each day with the respondents on the street and recording observations and insights in daily field notes.

Over 300 youths were contacted during the course of the research; 220 of the youths met the study criteria. Twenty of the eligible youths, however, declined to participate in the interview process. The 200 youths who were interviewed had an average age of almost nineteen (X=18.86). The racial make up of the sample was predominantly Caucasian (77 percent), although almost a quarter (n=46) were from other racial groups. Aboriginal youth made up the majority of these other respondents (n=32).2 The majority of these youths had spent time living away from their parents (n=185), and a full three-quarters of the sample had been with no fixed address during the last year (n=153), spending almost five months on average (4.93) without shelter.

Measuring crime and substance use

Information on a number of measures of criminal involvement and drug use was obtained via self-
reports (see Appendix A) for excellent summaries on the use and issues of this method, see Elliott, Huizinga, & Menard, 1989, pp. 4–9; Hindelang, Hirschi, & Weiss, 1981, pp. 13–25; Inciardi et al., 1993; Johnson, 1979, pp. 89–93). The raw scores of individual offenses were aggregated across the range of offenses to create indices of property and violent crime, respectively, as well as a total crime measure. An analysis of the raw frequency distributions for the crime indices suggested a high degree of skewness in the measures. This condition stemmed from most respondents reporting small amounts of crime, while a few reported large numbers of offenses (mean Property Crime=347.18, S.D.=1404.34; mean Violent Crime=87.2, S.D.=379.9; mean Total Crime=430.07, S.D.=1804.89). To significantly reduce this skewness, the index values were logged (log mean Property Crime=3.20, log S.D.=2.35; log mean Violent Crime=2.12, log S.D.=1.73; log mean Total Crime=3.65; log S.D.=2.18). To determine the use of drugs, respondents were asked, “How many times in the last year have you used marijuana or hash?” (1=never, 7=daily).

**Predictor variables**

At the individual level, research on strain theory frequently operationalized strain as the discrepancy between occupational or educational aspirations and expectations (Agnew, 1992; Hirschi, 1969; Liska, 1971; Quicker, 1974), with generally poor predictive utility (Akers, 1994; Burton et al., 1994; Farnworth & Leiber, 1989). For juvenile strain, Farnworth and Leiber (1989) tested the pragmatic validity of this traditional measure and a measure based on the disjunction between economic goals and educational means, with the prevalence and frequency of self-reported delinquency as criterion variables. For their adolescent, school-aged sample, the latter disjunction was a better, more consistent measure. With an adult general population sample, Burton et al. (1994) assessed three measures of strain to explain self-reported crime: the gap between economic aspirations and expectations, perceptions of blocked opportunities, and feelings of relative deprivation. While the latter two measures were related to adult offending, these relationships failed to persist with controls for measures of concepts from competing theories.

Since the sample consisted of older street youth who were no longer in school, components of strain involving educational goals or means were less appropriate. While aspects of blocked opportunities or relative deprivation could apply to the sample, Agnew (1992) offered a number of alternatives to measure the failure to achieve positively valued goals, including the suggestion to examine differences between outcomes and the perceived fairness of outcomes. Following Agnew’s advice, this study focused on labor market strain. The strain variable was created by asking two questions. First, to measure their labor market achievement, the respondents were asked “How many months in the last year were you out of work?” The average respondent was out of work slightly over eight months (X=8.22, S.D.=3.60). Unemployment was then recoded into three categories: low (zero to four months, n=38), medium (five to eight months, n=57), and high (nine to twelve months, n=105) (measures of dispersion for recoded variable X=2.33, S.D.=.78). The respondents were also asked to agree or disagree with the following statement: “Any person who is able and willing to work hard has a good chance of succeeding” (1=agree; 3=disagree). Here there was only a small degree of perceived unfairness over unemployment (X=1.79, S.D.=.69).

The strain variable was then constructed by comparing the respondents’ scores on these two measures. Strain should occur where there is a discrepancy between the respondent’s length of unemployment (where unemployment is considered low achievement) and what they perceived as fair or just outcomes. Respondents who scored high on unemployment (low achievement) and felt that despite working hard people were unlikely to succeed (high injustice) were given the highest score on our strain variable (=2). Youths who scored high on unemployment (low achievement) and medium on the unfair outcomes measure were coded as having medium strain (=1). Youths who scored medium on unemployment (medium achievement) and high on the unfair outcomes measure were also coded as having medium strain.

In the cases where there were no discrepancies between level of unemployment and expectations—where the youths’ employment situations matched their perceptions of the relationship between hard work and success—respondents received scores of zero. An examination of the frequency distribution of the strain variable revealed that most youths experienced no strain (n=125). A minority of the youths, however, experienced a moderate (n=54) or high (n=21) degree of strain where there was a discrepancy between their perceptions of fair outcomes and actual outcomes.

To examine the effects of the various conditioning variables outlined by Agnew, the study also included measures of delinquent peers, moral inhibitions, conventional commitments, self-efficacy, attribution of blame, and negative emotions as variables expected to condition strain and influence crime and delinquency (see Appendix A for measures).
The revised strain theory calls for the creation of interaction terms between strain and the various intervening variables. Aiken and West (1991) note that interaction effects in regression analyses produce large standard errors in the lower-order independent variables and multicollinearity between the interaction terms and the variables from which they were developed, all of which lead to possible computational problems. They suggest that this can be rectified by standardizing the lower-order variables and creating interaction terms by multiplying the resultant standardized scores.5

Following their lead, the lower-order independent variables were standardized by transforming them into $z$ scores (see Table 1 for measures of dispersion). The interaction terms were then produced by multiplying the relevant standardized variables together. Therefore, strain was multiplied separately with delinquent peers, moral inhibitions, conventional commitments, self-efficacy, attribution of blame, and anger. An interaction term between anger and external attribution was also created.6

The analysis proceeded by first regressing the four dependent variables (total crime, property crime, violent crime, and drug use) on the set of lower-order standardized predictor variables. Following the lead of Paternoster and Mazerolle (1994), the interaction terms were then entered one at a time into the equations and the regressions were repeated to evaluate the conditioning effects of these variables on the relationship between strain and crime.7 While a cross-sectional design did not allow tests for the dynamic aspects of the theories of Agnew (1992), Cloward and

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Means, standard deviations, and ranges for dependent and lower-order in dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Age</td>
<td>18.86</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Strain</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Delinquent peers</td>
<td>2.89</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug using peers</td>
<td>3.62</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol using peers</td>
<td>3.82</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>2.30</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>External attribution</td>
<td>2.43</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Job commitment</td>
<td>3.31</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>3.39</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crime</td>
<td>3.65</td>
</tr>
<tr>
<td></td>
<td>(430.07)</td>
</tr>
<tr>
<td>Property crime</td>
<td>3.12</td>
</tr>
<tr>
<td></td>
<td>(347.85)</td>
</tr>
<tr>
<td>Violent crime</td>
<td>2.12</td>
</tr>
<tr>
<td></td>
<td>(82.30)</td>
</tr>
<tr>
<td>Drug use</td>
<td>4.51</td>
</tr>
</tbody>
</table>

The mean for the standardized variables is zero, with a standard deviation of one. Ranges for standardized and logged variables are in parentheses.

The revised strain theory calls for the creation of interaction terms between strain and the various intervening variables. Aiken and West (1991) note that interaction effects in regression analyses produce large standard errors in the lower-order independent variables and multicollinearity between the interaction terms and the variables from which they were developed, all of which lead to possible computational problems. They suggest that this can be rectified by standardizing the lower-order variables and creating interaction terms by multiplying the resultant standardized scores.5

Following their lead, the lower-order independent variables were standardized by transforming them into $z$ scores (see Table 1 for measures of dispersion). The interaction terms were then produced by multiplying the relevant standardized variables together. Therefore, strain was multiplied separately with delinquent peers, moral inhibitions, conventional commitments, self-efficacy, attribution of blame, and anger. An interaction term between anger and external attribution was also created.6

The analysis proceeded by first regressing the four dependent variables (total crime, property crime, violent crime, and drug use) on the set of lower-order standardized predictor variables. Following the lead of Paternoster and Mazerolle (1994), the interaction terms were then entered one at a time into the equations and the regressions were repeated to evaluate the conditioning effects of these variables on the relationship between strain and crime.7 While a cross-sectional design did not allow tests for the dynamic aspects of the theories of Agnew (1992), Cloward and

<table>
<thead>
<tr>
<th>Table 2</th>
<th>OLS regression, total crime, property crime, violent crime, and drug use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total crime $B$ ($b$)</td>
</tr>
<tr>
<td>Age</td>
<td>−0.075 (−0.162)</td>
</tr>
<tr>
<td>Race</td>
<td>−0.102 (−0.221)</td>
</tr>
<tr>
<td>Strain</td>
<td>0.193 (0.425)$^*$</td>
</tr>
<tr>
<td>Delinquent peers</td>
<td>0.340 (0.731)$^*$</td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.217 (0.469)$^*$</td>
</tr>
<tr>
<td>Anger</td>
<td>−0.021 (−0.001)</td>
</tr>
<tr>
<td>External attribution</td>
<td>−0.010 (−0.000)</td>
</tr>
<tr>
<td>Job commitment</td>
<td>−0.080 (−0.172)</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.056 (0.121)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.363</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.331</td>
</tr>
<tr>
<td>$n$</td>
<td>194</td>
</tr>
</tbody>
</table>

** Significant at .01, one-tailed test.
† Significant at .05, two-tailed test.
‡ Significant at .01, two-tailed test.
Ohlin (1960), and Hoffman and Ireland (1995), it did allow tests for whether the relationships were consistent with the theories. One-tailed tests were used where the authors had predicted the direction of the relationships between the independent and dependent variables.

**Results**

The analysis begins by examining the relationships of the lower-order variables with the measures of crime and substance use (see Table 2). Table 2 indicates that strain has a significant net relationship with crime and substance use.

### Table 3

**OLS regression with main effects and interaction terms for total crime, property crime, violent crime and drug use**

<table>
<thead>
<tr>
<th></th>
<th>Total crime</th>
<th>Property crime</th>
<th>Violent crime</th>
<th>Drug use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B (b)</strong></td>
<td>R² (R² ch)</td>
<td>B (b)</td>
<td>R² (R² ch)</td>
<td>B (b)</td>
</tr>
<tr>
<td>Job commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strain</td>
<td>0.181</td>
<td>0.366</td>
<td>0.142</td>
<td>0.383</td>
</tr>
<tr>
<td></td>
<td>(0.396)**</td>
<td>(0.004)</td>
<td>(0.337)**</td>
<td>(0.012)</td>
</tr>
<tr>
<td>Delinquent peers</td>
<td>0.349</td>
<td></td>
<td>0.233</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.749)**</td>
<td></td>
<td>(0.801)**</td>
<td></td>
</tr>
<tr>
<td>Strain × delinquent</td>
<td>0.066</td>
<td></td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>peers</td>
<td>(0.267)*</td>
<td></td>
<td>(0.000)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.220</td>
<td></td>
<td>0.208</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.475)**</td>
<td></td>
<td>(0.589)**</td>
<td></td>
</tr>
<tr>
<td>Strain × delinquent</td>
<td>0.115</td>
<td></td>
<td>0.131</td>
<td></td>
</tr>
<tr>
<td>norms</td>
<td>(0.269)*</td>
<td></td>
<td>(0.213)*</td>
<td></td>
</tr>
<tr>
<td>Strain</td>
<td>0.192</td>
<td></td>
<td>0.158</td>
<td></td>
</tr>
<tr>
<td>External attribution</td>
<td></td>
<td>0.367</td>
<td>0.389</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.422)**</td>
<td>(0.005)</td>
<td>(0.388)**</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Anger</td>
<td>–0.026</td>
<td></td>
<td>–0.043</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–0.001)</td>
<td></td>
<td>(–0.001)</td>
<td></td>
</tr>
<tr>
<td>Strain × anger</td>
<td>–0.069</td>
<td></td>
<td>–0.075</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–0.155)</td>
<td></td>
<td>(–0.133)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.184</td>
<td></td>
<td>0.176</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.403)**</td>
<td>(0.004)</td>
<td>(0.345)**</td>
<td>(0.017)</td>
</tr>
<tr>
<td>External attribution</td>
<td>–0.006</td>
<td></td>
<td>–0.067</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–0.000)</td>
<td></td>
<td>(–0.114)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.070</td>
<td></td>
<td>–0.120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.161)</td>
<td></td>
<td>(0.218)</td>
<td></td>
</tr>
<tr>
<td>Strain</td>
<td>0.192</td>
<td></td>
<td>0.143</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td></td>
<td>0.363</td>
<td>0.372</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.422)**</td>
<td>(0.000)</td>
<td>(0.403)**</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Job commitment</td>
<td>–0.080</td>
<td></td>
<td>–0.039</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–0.172)</td>
<td></td>
<td>(–0.128)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.202</td>
<td></td>
<td>0.163</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.443)**</td>
<td>(0.008)</td>
<td>(0.413)**</td>
<td>(0.010)</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.066</td>
<td></td>
<td>0.040</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.143)</td>
<td></td>
<td>(0.212)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.091</td>
<td></td>
<td>0.040</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.200)</td>
<td></td>
<td>(0.249)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>–0.023</td>
<td></td>
<td>–0.040</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–0.001)</td>
<td></td>
<td>(–0.001)</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>–0.007</td>
<td></td>
<td>–0.055</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(–0.000)</td>
<td></td>
<td>(–0.001)</td>
<td></td>
</tr>
<tr>
<td>Delinquent norms</td>
<td>0.017</td>
<td></td>
<td>0.030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td>(0.010)</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at .05, one-tailed test.
** Significant at .01, one-tailed test.
† Significant at .05, two-tailed test.
with total crime, property crime, and violent crime. Those youths who experienced more discrepancy between their employment outcomes and their perception of labor market fairness engaged in more property offenses, violent offenses, and crime in general. Strain, however, was not a significant predictor of drug use. Further, youths with more delinquent peers were also at greater risk to be involved in all of the behaviors examined. Similarly, those respondents who indicated little moral inhibition about engaging in criminal activities were more likely to be involved in all of the activities. Table 2 also reveals that Caucasian youths were more likely to be involved in property offenses and that older youths were more likely to be involved in drug use. Those youths with little job commitment were also more likely to be involved in drug use. Thus, strain leads to violent and property crime, while an absence of commitment to employment is linked to drug use. None of the other variables has an independent net relationship with the crime measures.

Table 3 examines the influence of the various interaction measures on the crime measures. Only the interaction effect and the two main effects were reported since the results in the models remained consistent. The $R^2$ change was reported to examine how much increased variance was explained by the addition of the interaction effect. The results reveal that the interaction between strain and delinquent norms is a significant predictor of total crime, property crime, and violent crime. Youths who experienced a discrepancy between their employment outcomes and perceptions of fairness, and who found nothing wrong with criminal behavior engaged in more violent, property, and total offenses net of all the other predictors. The main effects of strain and delinquent norms remain significant in these models with the addition of the interaction effect. While these interaction effects and their additions to the models are statistically significant, the changes to the models’ $R^2$ are quite small. The addition of the interaction effect in the total crime model increases the explained variance by only 1.2 percent. The increase in the explained variance in the property crime model is 1.3 percent and 1.5 percent in the violent crime model.

Table 3 also reveals a significant interaction between strain and external attribution when predicting property crime. Youths who felt more strain and were more inclined to attribute their unemployment externally to the government or private industry engaged in more property offenses. The increase in explained variance by adding the interaction effect to the model is only a modest 1.7 percent. The main effect of strain, however, remains significant even with the interaction effect included. The results also indicate that there is an interaction between strain and delinquent peers predicting property crime. Youths who felt more strain and who had more delinquent peers were more likely to engage in property offenses. The main effects of strain and delinquent peers remain significant when the interaction effect is included. The addition of this interaction effect into the model increased the $R^2$ by a modest 1.2 percent. None of the other interaction effects entered with their main effects proved to be significant predictors of the crime and drug measures.

Since three of the significant interaction effects predict property crime, an additional model was created including the strain/delinquent peers interaction, the strain/delinquent attitudes interaction, and the strain/external attribution interaction with the lower-order variables. When all three of the interactions were included in the model at once, only the strain/external attribution variable remained a significant predictor of property crime. Utilizing the backwards elimination procedure as an alternative method, the strain/delinquent attitudes interaction was removed, leaving the strain/delinquent peers and strain/external attribution interactions as significant predictors of property crime. Together, these two interactions increased the explained variance in the model by 3.2 percent.

Discussion

Labor market strain

This study set out to examine the role labor market strain plays in the criminal behavior and substance use of street youths. The findings indicate that youths who experienced a greater discrepancy between their actual employment experiences and their perceptions of labor market fairness were at greater risk for committing more property crime, violent crime, and total crime. This experience of strain may have led these youths to commit more crimes in an attempt to reduce or manage this discrepancy. Property crime might have mitigated, to some extent, the lack of material success by supplying goods or funds, while generalized feelings of unfairness might have been dealt with, or expressed, by violently striking out at human targets. Generally, these perceptions of unfairness made it more likely that these youths would engage in crime.

Labor market strain did not, however, have a significant impact on street youths’ drug use, suggesting that its generalizability is limited to the realm of property and violent offenses. As the first hypo-
thesis predicts, the effect of labor market strain is a direct one, which remains significant net of other predictors. Thus, consistent with past research, it appears that measures of strain that incorporate the idea of fairness and blocked opportunities, rather than those that explore the gaps between aspirations and expectations, have stronger relationships with criminal behavior (Burton et al., 1994; Farnworth & Leiber, 1989). In contrast to other research, however, this relationship persists among higher-risk street youth when controls for other measures are included in the model.

*Strain's interaction with conditioning variables*

The results also suggest that the interaction between high levels of strain and delinquent norms is a predictor of criminal behavior. Consistent with the fourth hypothesis, those with high levels of strain who also held orientations that favored law breaking were more involved in property offenses, violent offenses, and crime generally. This interaction did not, however, influence drug use. While this interaction effect was generalizable across different types of criminal behavior, other significant interaction effects were restricted to explaining property offending.

The results show that youths who experienced high levels of strain and who had abundant delinquent peers were at increased risk for engaging in more property crime. As earlier strain theorists speculate (Cloward & Ohlin, 1960; Cohen, 1955), strain may lead similarly situated youths into the company of one another. These peers may facilitate and encourage criminal behaviors as well as teaching, supporting, and rewarding beliefs that justify or rationalize criminal conduct. In this research, this appears to be most applicable to property offenses.

Also key for property crime among street youths with high levels of strain was an external attribution of blame for their unemployment. As Cloward and Ohlin (1960) note, the failure to achieve socially approved goals can lead to alienation and a withdrawal of legitimacy for dominant norms (see also Hoffman & Ireland, 1995). The key is that the failure must be attributed to the social order rather than oneself. Youths in this study who experienced high levels of strain and who blamed the government and private industry for their employment difficulties were more likely to react with more property crime. Despite its centrality in both classic and revised strain theories, there has been little research exploring attributions and crime (see Baron & Hartnagel, 1997) and the interaction between strain and attributions.

The significant interaction effects are important because research has tended to ignore the interactive propositions of the early strain theory (Hoffman & Ireland, 1995), although the theory cannot be adequately assessed by examining only the direct effects of strain. It is also the case, however, that the contribution of these interactions to understanding criminal behavior seems somewhat limited. The amount of additional variance explained in the models with the inclusion of the interaction effects is modest. McClelland and Judd (1993), however, pointed out the difficulty of detecting interaction effects explaining an appreciable proportion of the variation in the dependent variable in field research compared to experimental studies. This makes the significance of these interactions more impressive. A comparison of the standardized effects shows that their influence within the models approaches that of strain, suggesting that their importance should not be underestimated. It is also important, however, to recognize that even with the inclusion of significant interactions, the main effect of strain remained a strong predictor of property crime, violent crime, and total offending.

The generalizability of the interaction effects across offenses, nevertheless, is limited. While the interaction between strain and delinquent norms is predictive across a number of offense types, the other significant interactions are offense-specific. It is also the case that four of the interactions that Agnew identifies fail to significantly predict any of the dependent variables examined and none of the interaction effects utilized predict drug use. The absence of a relationship between the main effect of strain and drug use emphasizes the restricted usefulness of strain in explaining drug use.

*Other variables*

The results also reveal that property crime, violent crime, total crime, and drug use were fostered by the availability of criminal peers and normative dispositions towards crime. These variables appear to be generalizable across offense types and appear to be strong predictors of these behaviors. As already alluded to above, strain may lead similarly situated youths to support and reward beliefs that rationalize or justify delinquent conduct and facilitate and encourage delinquent behaviors.

In terms of variables associated with more specific offenses, the lack of job commitment was a significant predictor of drug use. This is in contrast to the influence of labor market strain, which did not influence drug use. This finding might be interpreted as supporting either a control argument or a classic strain argument. Flowing from control theory, it may be those who were never committed to the labor market who use drugs regularly. Drawing from strain
theory, it may be those committed to the labor market but who became strained by their lack of labor market success and over time decreased their commitment to this avenue of success who became regular drug users (Baron, 2001). The finding that it is older youths who are more likely to use drugs lends some credence to this interpretation. It is also the case that drug use can increasingly isolate youths from conventional society. Inciardi et al. (1993) argue that alcohol and drug use are part of a street lifestyle. Substance use is an activity that can provide street people with an easy way to obtain status-enhancing role or identity (Agar, 1973; Chein, Gerard, Lee, & Rosenfeld, 1964; Feldman, 1968; Gould, Walker, Crane, & Lidz, 1974; Hansen, Beschner, Walters, & Bovelle, 1985; Preble & Casey, 1969; Shover & Honaker, 1992; Waldorf, 1973). There is evidence that longer-term users involved in this lifestyle begin to limit their contacts to other users and come to accept substance use as part of their character or role (Akerstrom, 1985; Inciardi et al., 1993; Johnson, 1973; Stephens, 1985). Longitudinal data would be required to determine which is the more accurate perspective (Burton & Cullen, 1992).

The study did not find the expected relationship between anger and crime, nor does this emotion condition the effect of strain on these offenses. Perhaps the presence of strain, delinquent peers, and delinquent norms reduces the necessity of anger as a force in criminal behavior. Social and cultural resources, in conjunction with strain, rather than emotion, appear more essential for these crimes. It is also possible that frequent crime may reduce any anger resulting from strain (Brezina, 1996). The sample of street youth is involved in a high amount of offending, with a mean number of 348 property crimes and eighty-two violent crimes. Their frequent involvement in crime during the course of the preceding year may have already mitigated any anger felt as a result of their circumstances and experiences. The material rewards of property crime and the expression of aggression in violent crime may, over time, mitigate any anger due to strain felt by these youths. Again, longitudinal data are required to test this interpretation. One could also argue that the measures of strain and emotion are specific and limited to the respondents’ employment circumstances while the revised theory describes a more comprehensive approach to strain. Perhaps a much broader measurement of sources of strain, anger, and the other emotions is required to adequately assess the hypothesized intervening or conditioning role of emotions in the revised theory.

The findings do support the hypothesis that anger and external attributions would not be related to substance use. It may be the case that different emotions and attributions are important in explaining different types of behavior. Central to Agnew’s (1992) general theory is the hypothesis that negative affect intervenes between strain and the response to it. While he stresses the importance of anger, he also refers to fear, depression, and disappointment. It might be the case that these other emotions are linked particularly to substance use as a coping strategy. It is also the case that Agnew’s (1995) general theory has not specified the possible attributional sources of these other emotions, although he does state (p. 115) that blaming oneself for goal blockage reduces the likelihood that such blockage will generate anger/frustration. Cloward and Ohlin (1960) claim that individuals explaining failure by personal deficiencies have the problem of coping with the psychic consequences of defining themselves as unworthy or inferior, and tend to experience feelings of guilt, shame, and loss of self-esteem (see also Box, 1987). This suggests that those who attribute their unemployment to internal causes should be more likely to express feelings of depression or guilt about their unemployment, and respond with a greater amount of escapist substance use.

Conclusion

The findings both support and raise questions about strain theory and some of its revisions as well as provide some insights into how actors respond to labor market strain. First, it appears that labor market strain is an important independent influence on deviant behavior, although it appears that higher levels of strain are more important for understanding property and violent crimes than substance use. Second, the findings provide suggestive evidence for some of the conditioning interactions outlined in the various forms of the theory. Thus, if one is to understand the relationship between strain and deviant behaviors, it appears important to recognize that strain may be conditioned by the availability of delinquent peers, delinquent dispositions, and attributions. It is also important to acknowledge that each of these conditioning effects is limited to particular deviant acts rather than, as the theory predicts, more generally operative across the four behaviors examined here.

Yet the findings are important since they are derived from a sample of higher crime-risk youth to whom strain theory had not previously been applied. These were older youths seriously at risk for criminal behavior rather than the traditional high school or representative samples that contain younger, more conventional youths (see Inciardi et al., 1993). The type of sample is important since
recent research suggests that the effects of employment or unemployment may be specific to populations of certain ages and structural locations (Wright & Cullen, 2000; Wright, Cullen, Agnew, & Brezina, 2001). Wright and Cullen (2000), for example, utilizing a sample of high school seniors, found that criminal propensity in tandem with delinquent coworkers influenced youths’ occupational delinquency. Wright et al. (2001), utilizing the same sample of largely rural high school seniors, found that money earned from a job actually increased delinquent conduct and drug use. With a much different sample of older youth out of school, out of work, and out on the street, this study found that perceptions of unfairness over the lack of employment and money increased crime.

The strain measure that examines the discrepancy between actual employment outcomes and perceptions of labor market fairness rather than the more frequently utilized measures is also important. The fact that this measure of strain is successful in predicting property, violent, and total crime suggests that Agnew’s (1992) direction to use such a measure is an improvement. It indicates the need to continue to utilize this type of revised measure of the classic strain variable in examining how the failure to achieve positively valued goals is linked to crime and delinquency. This revised conceptualization of strain, rather than the hypothesized impact of emotions, may in the long run prove to be the more significant contribution of Agnew’s revised theory. The work has also explored the interactive properties latent in the various forms of strain theory but often neglected in empirical work.

Future work should continue to explore the role of strain and its conditioning variables on crime and delinquency, utilizing a broader age range of samples drawn from both street and conventional populations. Additional measures of strain, including the removal of positively valued stimuli, the presentation of negatively valued stimuli (Agnew, 1992), and relative deprivation (Burton & Cullen, 1992), must still be examined within the street population, and the labor market strain measures should be applied to more conventional populations. Further, it may be important to take into account that opportunity is shaped by broader contexts. Burton and Cullen (1992) argue that it might be useful to include such measures as employment rate, quality of jobs, access to transportation, and travelling time to work to contextualize the area labor market. Further, to fully capture the dynamics of strain outlined in these theories, longitudinal tests need to be undertaken. It is only through a broader examination of populations and types of strain that the intricacies of strain theory will be uncovered.

Acknowledgements

We thank Robert Agnew for his useful comments. The financial support of the Social Sciences and Humanities Research Council of Canada, the Solicitor General Canada, and the Edmonton Sociological Society is gratefully acknowledged. Part of this article was prepared while Tim Hartnagel was a Visiting Fellow at the Institute of Criminology, Cambridge University. We also thank Ryan Causton for his research assistance.

Appendix A. Summary of measures

A.1. Dependent variables

A.1.1. Property crime
I would like you to think back over the last year (give anchor) and tell me how many times you have:

broken into a car?
broken into a building?
taken something worth less than fifty dollars?
taken something worth more than fifty dollars?
broken into a structure to sleep?
stolen food?
taken a car without permission of the owner?

(ALPHA when items unlogged=.4275; ALPHA when items logged=.8339).

A.1.2. Violent crime
I would like you to think back over the last year (give anchor) and tell me how many times you have:

used physical force to get money or things from another person?
attacked someone with a weapon or fists, injuring them so badly they probably needed a doctor? got into a fight just for the hell of it?
taken part in a group fight?

(ALPHA when items unlogged=.4813; ALPHA when items logged=.8571).

A.1.3. Total crime
An aggregate of the violent crime and property crime measures listed above. (ALPHA when items left unlogged=.6267; ALPHA when items logged=.8769).

A.1.4. Drug use
How many times in the last year have you used marijuana or hash? (1=never, 2=once a month, 3=two to three times a month, 4=once a week, 5=two to
A.2. Independent variables

A.2.1. Strain

How many months in the last year were you out of work?

Any person who is able and willing to work hard has a good chance of succeeding (1=agree; 3=disagree). See Methods section for discussion of the creation of this variable.

A.2.2. Delinquent peers

How many of your friends steal things or money (1=none; 5=all)?

A.2.3. Delinquent norms

How wrong do you think it is to shoplift (1=very wrong; 5=not wrong at all)?

A.2.4. Job commitment

I am not ready for a long-term commitment to a job (1=strongly agree; 5=strongly disagree).

A.2.5. Self-efficacy

I feel helpless about my unemployment (1=strongly agree; 5=strongly disagree).

A.2.6. External attribution

How important, do you believe, are the following as a direct cause of you being unemployed?

the failure of private industry to offer enough jobs;
the failure of government to create sufficient jobs;
the economic situation of the country. (1=very unimportant; 5=very important).

Three items summed and then divided by three (ALPHA=.684).

A.2.7. Anger

I feel angry about my unemployment (1=strongly disagree; 5=strongly agree).

A.2.8. Race

0=White; 1=non-White.

A.2.9. Age

Natural age in years at the time of the survey.

Notes

1. Those who agreed were supplied with informed consent forms outlining study goals and their rights within the interview. Subjects were told they were not obliged to answer any of the questions and could withdraw from the interview at any time. None of the youths exercised this power.

2. Aboriginals were drastically over represented in the sample. According to LaGrange and Silverman (1999), about 6 percent of the youths in the city high schools was native. In contrast, about 77 percent of the high school students was Caucasian, with the remaining 16 percent being primarily of Asian background.

3. For example, youths who scored high on unemployment (low achievement), and agreed that people achieved according to their effort, were given a strain score of zero to indicate that there was no discrepancy between what they had achieved and what they felt was fair. Following this logic, youths with medium unemployment and medium perceptions of fairness were also given strain scores of zero. Those situations where youths indicated that their employment circumstances were better than could be expected also received a score of zero. For example, youths who indicated low unemployment (high achievement) scores despite feeling that hard work did not guarantee success were viewed as having no strain.

4. To assess the validity of this strain measure, the correlations between the two variables used in its construction and whether respondents reported that they were currently looking for work were examined. A full two-thirds of the sample indicated that they were currently looking for work and the relationship between looking for work and length of unemployment was practically nonexistent (r=.001). There was a slight nonsignificant relationship between looking for work and respondents believing that everyone who was willing to work hard had a good chance of succeeding (r=-.109). Finally, there was a small nonsignificant negative relationship between looking for work and respondents believing that everyone was experiencing strain that gave more confidence in using this measure. Further analysis revealed no significant relationship between looking for work and the dependent variables at the bivariate level.

5. An alternative method offered by Aiken and West is to first mean center variables and create the interaction terms from these centered variables. While superior to the uncentered variables, Aiken and West note that correlation may remain between first order and product terms due to the nonnormality of the variables. Since the analysis using the mean centered technique produced only minor differences in the findings, the standardized results were selected to be presented to guard against the possibility of what Aiken and West referred to as nonessential ill conditioning due to the remaining correlation.

6. To determine the success of the standardizing procedure, the correlation matrix of the predictor variables was examined. This table is available from the authors upon request. It revealed that there was no zero order correlation above .4 and an examination of the variance inflation factor scores suggested that any existing collinearity between variables would not degrade their estimates.

7. McClelland and Judd (1993) pointed out the difficulty of detecting interaction effects explaining an appreciable proportion of the variation in the dependent
variable in field research compared to experimental studies. They concluded, however, that field researchers should continue to seek such interactions while being conscious of the odds against them.

8. In additional regressions, the two component variables of strain—months unemployed and perceived fairness of outcomes—along with the measure of strain were also included. Neither was a significant net predictor, however, for three of the four dependent variables and there were indications of collinearity among these three variables. Therefore, it was decided to only include the measure of strain in subsequent analyses.

References


