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The Moderating Effects of Internal and Perceived External Sanction Threats on the Relationship between Deviant Peer Associations and Criminal Offending

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ABSTRACT

Integrating social learning and deterrence literatures, the present study hypothesizes a circumstance in which aspects of sanction threats mitigate the influence of deviant peers on criminal offending. Multiple regression analyses of the National Youth Survey (Wave VI, 1984) yielded results generally consistent with the hypothesized relationships: 1) Deviant peers predict self-offending after controlling for previous offending and other common antecedent variables. 2) Individuals who perceive higher internal sanction threat and who anticipate greater disapproval of parents and coworkers are less vulnerable to deviant peer influence. 3) While internal sanction threat and perceived disapproval of parents and coworkers simultaneously reduce deviant peer influence on self-offending, the strongest reduction effect is observed for internal sanction threat, followed by perceived disapproval of parents and coworkers respectively. 4) Perceived threat of formal arrest reduces peer effect on criminal offending only when internal sanction threat is weak. These findings are discussed in light of theoretical contributions and policy implications.

KEYWORDS: crime; deviant peers; internal sanction; perceived informal sanction; perceived formal sanction

Social learning theorists (Akers 1985; Sutherland 1947) have long recognized deviant peers to be a cause of a person's own deviance. While earlier versions of the learning theory (e.g., differential association theory) have posited that deviant peers influence criminal offending by fostering attitudes and beliefs that are favorable toward illegal behaviors (Sutherland 1947), more recently learning theorists have expanded the mechanisms of learning to include peers' roles in reinforcing illegal behaviors, providing deviant role models, and facilitating criminal opportunities (Akers 1985).

The deterrence literature, on the other hand, has portrayed sanction threats as the main inhibitors of crime (Braithwaite 1989; Thomas and Bishop 1984; Tittle 1980). While the traditional or classical deterrence theory emphasized actual formal punishments (i.e., imposed by state laws and legal codes) in preventing future deviance (Burkett and Hickman 1982), recently this literature has extended to encompass internal sanction as well as perceived formal and informal sanction threats as crime deterrents (Bishop 1984; Piquero and Tibbetts 1996).

While each of these two theoretical approaches has generated abundant research of their own, few studies, however, have integrated these important lines of work by positing whether or not sanction threats, as informed by the deterrence literature, may counteract deviant peer influence on criminal offending (as illustrated by the learning theory). Although a few researchers have noted that the effect of deviant peers on criminal offending may vary under one or another condition of social constraint (e.g., Agnew 1995; Brezina and Piquero 2001; Warr 1993a), none of the studies, however, have explored extensively whether aspects of sanction threats, especially internal and perceived formal and informal sanction risks, may individually and concurrently mitigate deviant peer influence on criminal offending. This issue is intriguing, since recently it has been suggested that exposure to deviant peers may be quite extensive and almost unavoidable in the United States (Warr 1993b). Thus, findings regarding the deterrent effects of sanction threats against deviant peers may contribute to programs that assist individuals in resisting deviant peer influence on self-offending.

This study thus extends the literature by hypothesizing a circumstance in which sanction threats may counteract deviant peer influence on criminal offending. Informed by the social learning theory, deviant peers are assumed to predict criminal offending. Drawing on the deterrence literature, sanction threats are expected to inhibit illegal involvement. Integrating these two lines of research, the present study addresses whether simultaneous presence of sanction threats may inhibit criminal behavior given deviant peer influence; in other words, whether sanction threats may mitigate deviant peer effects on criminal offending. Three aspects of sanction threats are examined in turn. They are: 1) internal sanction, 2) perceived risks of informal sanction, and 3) formal sanction. A secondary goal of the study is to assess the relative importance of these sanction threats in modifying (i.e., reducing or exacerbating) deviant peer influence on criminal offending.

MODERATING EFFECTS OF SANCTION THREATS

Internal Sanction

Early discussions on internal sanction threat may be traced to the works of control theorists, who have implicitly or explicitly argued that forces within the individuals enable the persons to refrain from violating social norms (Liska and Messner 1999). Reiss (1951), for example, attributed the causes of deviance and crime to lack of personal and social controls, and claimed that personal controls are internalized social norms and values that acquire through the process of socialization. Nye (1958) distinguished internal control from direct and indirect controls and suggested that a person's conscience or guilt (internal control) prevents him or her from engaging in illegal acts. Hirschi (1969) emphasized inner moral beliefs as an aspect of conformity against delinquency, while Reckless (1967) recognized the power of inner containment as an insulator against crime.

Recently the deterrence literature has incorporated the concept of self-imposed sanction threat as an inhibitor of criminal involvement (Braithwaite 1989; Grasmick and Bursik 1990; Reckless 1967; Tittle 1980). Thus individuals with stronger inner conscience are less likely to break conventional rules, because such violations are likely to generate feelings of guilt and shame. Further, it has been suggested that inner conscience or threat of shame may be more effective in crime control than other aspects of sanction threats (Bishop 1984). For example, in comparing sanction threats rendered by formal authority, Braithwaite (1989: 72) noted that "punishment by our own conscience is much more potent threat than punishment by the criminal justice system." Others have also observed that threat of shame or conscience exerted the greatest effect on criminal offending among many variables, including threat of external sanction factors (e.g., Bishop 1984; Grasmick and Bursik 1990). Thus, based on these arguments on internal sanction threat, it is hypothesized that,

H1: Individuals with stronger internal threat of shame are more likely to resist deviant peer influence than those who have weaker inner barriers, and further,

H2: Internal sanction threat may be more effective than external sanction threats in mitigating deviant peer influence on criminal offending.

Informal Sanction Threat

Informal sanctions generally refer to the actual or perceived responses of significant others (e.g., parents and romantic partners) with the aim of curbing socially inappropriate behaviors (Liska and Messner 1999). The power of the threat of informal sanctions has been noted in numerous empirical studies that addressed the direct and indirect effects of such sanction threats (Braithwaite 1989; Brezina and Piquero 2001; Grasmick and Green 1980; Piquero and Tibbetts 1996; Tittle 1977, 1980). Generally, it has been found that the anticipated disapproval of significant others tend to either prevent or inhibit individuals from trespassing the normative standards (Braithwaite 1989; Grasmick and Green 1980; Piquero and Tibbetts 1996; Tittle 1977, 1980). In contrast, those who do not anticipate sanctions or negative reactions of significant others may experience little obligation to conform and thus may feel free to go along with deviant associates in committing socially proscribed behaviors and activities (Braithwaite 1989; Tittle 1977, 1980).

Researchers have also suggested that informal reactions are stronger forms of crime deterrent than formal sanction mechanisms (Braithwaite 1989; Tittle 1977, 1980). For example, it has been noted that the anticipated disapproval of significant others and the likelihood of subsequent rejections may pose a greater threat to individuals, especially to their sense of self and well being than the anticipation of formal punishment (Tittle 1980; Tripplett and Jarjoura 1994). Further, informal sanctions tend to occur in the individuals' immediate social environment and frequently prior to the administration of formal punishments (Tripplett and Jarjoura 1994). Thus, the anticipated sanctions of the significant others may be more intensely felt and pose a greater threat than that of the formal punishment (Ward and Tittle 1993; Wellford 1987). Consistent with these arguments, it is expected that,

H3: Individuals who anticipate greater informal sanctions of significant others may be more likely to resist deviant peer influence than those who do not anticipate informal punishment, and further,

H4: Informal sanction threat may be more effective in mitigating deviant peer influence than formal sanction threat.

Formal Sanction Threat

Formal sanction threats generally involve the actual or perceived legal responses or state-imposed punishments for illegal behaviors (Grasmick and Bursik 1990; Liska and Messner 1999). Although the effect of formal punishments on crime control has generated some disputes in recent years (see Piquero and Tibbetts 1996; Tittle 1980), many have noted the importance of formal threat of punishment in reducing and/or preventing crime (Grasmick and Bursik 1990; Grasmick and Green 1980; Nagin and Paternoster 1991; Williams and Hawkins 1986; Zimring and Hawkins 1973). The

prospect of formal punishment may be detrimental to individuals not only by depriving them of freedom and opportunity to participate in conventional activities, but formal punishment is also likely to result in other negative consequences including loss of social status and strong stigmatization associated with the punishment (see Zimring and Hawkins 1973 for a detailed discussion of stigmatization). Thus, individuals who perceive these negative consequences may be less willing to take the chance, while those who expect they can get away with illegal activities or think the threat of punishment is low may be more willing to go along with deviant peers in violating socially established rules. Consistent with these arguments, it is hypothesized that,

H5: Individuals who anticipate the greater likelihood of formal punishment are more likely to resist deviant peer influence than those who anticipate little threat of punishment, and as it is hypothesized in H2 and H4, the effect of perceived formal sanction may be relatively weaker than both the internal and informal sanction threats.

METHOD

Sample

The hypothesized relationships are tested using data derived from the 1984 interview (Wave VI) of the National Youth Survey (NYS) (Elliott, Huizinga, and Ageton 1985; Elliott, Huizinga, and Menard 1989). The NYS is a national probability sample of 1,725 youths who were between the ages of eleven and seventeen and who resided in households in the United States in 1976. The initial five interviews (1977-1981) contained extensive information on variables essential to this project. For example, data were gathered on perceived parental disapproval of criminal offending (i.e., one aspect of informal sanction) as well as individuals' own and their close friends' illegal behaviors. However, it was not until the sixth follow-up interview (1984) did the investigators expand the scope of the study to include information on internal sanction threat and perceived formal punishment in addition to those variables available in the previous interviews. Thus only the data from the 1984 interview are suited for testing current research hypotheses.[1] Although the choice of these data was somewhat limited by the availability of empirical measures, these data should be considered appropriate since this group has demonstrated considerable variations in criminal offending and deviant peer influences (Elliott, Huizinga, and Ageton 1985; Elliott, Huizinga, and Menard 1989; Warr 1998). Besides, the 1984 interview captured a time when the respondents were mostly in their young adult years (18-24). Young adulthood is an important transitional stage in life that has received scant attention until quite recently (Sampson and Laub 1993; Warr 1998). Thus the present study will join others in contributing to the understanding of joint influences of deviant peers and sanction threats on criminal offending among this important and relatively mature group of individuals.

A total number of 1,496 respondents participated in the 1984 interview. Among those who provided complete information on the study variables (N = 1,159),[2] fifty-one (51) percent are males, approximately eleven (11) percent African American, and three (3) percent Hispanic American. Approximately twenty-three (23) percent of the respondents are married, and seventeen (17) percent reported having at least one child. About twenty-seven (27) percent of the respondents reside in urban areas.

Measures

A total number of fourteen variables (excluding the interactive terms) were included in the analysis. For ease of interpretation, all of the variables were standardized (or centered) before they were entered into the regression analyses (see Jaccard, Turrisi, and Wan 1990 for recommendations of estimating interactive models).[3]

Criminal Offending was constructed from fifteen items of self-reported rates of participation in illegal activities. The index (alpha[4] = .79) represents general offending rather than specific categories of offense. It documents within the past twelve months prior to the interview how often respondents participated in theft, use of violence, vandalizing properties, drug-related offenses, and other miscellaneous illegal behaviors.[5] As originally designed in the NYS interviews, the responses to these questions range from 1 indicating *never* to 9 indicating *once every 2-3 days*. Following previous research (e.g., Liu 2000), factor weights of the component items were used to construct the index.[6] Similar to the additive index, the weighted composite scale has higher scores reflecting greater rates of offending.

Deviant Peers was constructed from a report of the number of friends who have engaged in criminal activities. Following prior research (Heimer and Matsueda 1994), the additive index (alpha = .78) consists of five items with reference to involvement in vandalizing property, use of violence (e.g., attacking others), theft (e.g., stealing things worth less than $5.00 and more than $50 respectively), and participating in strong-armed robbery. The responses to these questions include 1 indicating *none of their friends* to 5 meaning *all of their friends* who have engaged in these illegal activities. Higher scores indicate association with more deviant peers.

The three sanction threat constructs are operationalized by four empirical variables. The variables include: 1) one index measuring internal sanction, 2) two indices reflecting anticipated informal sanctions (i.e., anticipated disapproval of parents and colleagues), and 3) one index measuring perceived formal threat of punishment (e.g., perceived threat of arrest for engaging in illegal acts).

Internal Sanction is measured by an additive index (alpha = .88) of five items that reflect the extent to which individuals may feel guilty or remorseful should they engage in such illegal acts as strong-armed robbery, stealing things worth more than $50, stealing things worth less than $5.00, attacking others, and vandalizing other's property. The responses to these questions range from 1 indicating *strongly disagree* to 5 indicating *strongly agree*. Thus, higher scores indicate stronger threat of internal sanction.

Informal Sanction

Informal sanction is reflected in two measures that include: a) anticipated disapproval of parents and b) anticipated disapproval of coworkers. Although the opinions of spouse or romantic partner may represent an important source of sanction (for this age group) (Sampson and Laub 1993), unfortunately only about 20% of the respondents in the sample are married at the time of this interview, or they responded to the questions regarding the anticipated disapproval of spouse/partner. Including information on spouse/partner opinions would drastically reduce the sample to an inadequate size. Thus for the current analysis, the focus is on the perceived disapproval of parents and coworkers, for whom the majority of the respondents provide information. The anticipated responses of parents (alpha = .87) and coworkers (alpha = .90) are in regard to individuals' participation in theft (petty and grand larceny), robbery, vandalism, and use of violence. The responses to these items range from 'strongly disapprove' to 'strongly approve'. Higher scores indicate greater anticipated disapproval or sanction threats.

Formal sanction is reflected in an additive index of five items (alpha = .87) that documented anticipated chance of formal arrest for engaging in theft, strong-armed robbery, aggression against others, and vandalizing property. The responses to these questions range from 1 indicating *10 percent chance of arrest* to 10 indicating *100 percent chance*. Thus, higher scores indicate greater anticipated formal threat or sanction.

Interactive terms

To examine whether these aspects of sanction threats may mitigate deviant peer influence on criminal offending, four interactive terms were constructed by multiplying the standardized measure of deviant peers with the standardized measures of the four sanction threat variables respectively. Thus, the interactive terms include: 1) Deviant Peers x Internal Sanction Threat, 2) Deviant Peers x Perceived Disapproval of Parents (1st indicator of informal sanction threat), 3) Deviant Peers x Perceived Disapproval of Coworkers (2nd indicator of informal sanction threat), and 4) Deviant Peers x Perceived Threat of Arrest (formal sanction). As recommended by Aiken and West (1991), the interactive terms themselves are not standardized. If the hypothesized relationships are valid, the interactive terms should be *inversely* related to criminal offending. Namely, the presence of sanction threats reduces the relationship between deviant peers and criminal offending.

Common Antecedents

A number of socio-demographic variables are hypothesized as common antecedent variables and thus are included in the models throughout the analysis. They include previous level of offending, the importance of friends, and the amount of time spent with friends. Previous level of offending is controlled, because those who committed illegal activities in the past may seek out similar-minded friends and thus continue to engage in illegal activities (Gottfredson and Hirschi 1990). The importance of friends and the amount of time spent with friends are controlled, because those who regard friends as important or who spend more time with friends are probably more liable to peer influence compared with those who do not regard peers as important and who spend less time with friends (Warr 1998). Prior level of offending is reflected in an index (alpha = .73) of similar measures (e.g., property offense, stealing, attacking others, and drug offenses) as current offending with the exception that the reference is made to illegal activities committed two years earlier. The items are weighted so that factor weights are used for constructing the scale. Higher scores indicate greater participation in illegal activities. A single item is used to measure the importance of friends. The responses range from 1 indicating *not important* to 5 for *very important*. Finally, time spent with friends is measured by self-reported amount of time spent with friends during the weekends. The response ranges from 1 for *very little* to 5 indicating *very much*.

Other variables that may serve as common antecedents of deviant peer associations, sanction threat variables, and criminal offending include such socio-demographic variables as age, gender, race/ethnicity, marital and parental status, urban residence, and socioeconomic status. Age is reflected in respondent's self-identified age at the time of the interview. Gender is coded with 1 for males and 0 for females. Two dummy variables are constructed to reflect

race/ethnicity. Black is coded with 1 for African Americans and 0 otherwise. Hispanic is also dichotomously coded with 1 for Hispanic Americans and 0 otherwise. The reference group is mostly Caucasian American. Marital status is coded with 1 for those who are married at the time of the interview and 0 otherwise. Parental status is reflected in a dichotomous variable with 1 indicating respondents having at least one child and 0 for no children at the time of the interview. Urban residence is coded with 1 for respondents living in urban areas and 0 for suburban or rural areas. Socioeconomic status is measured by the Duncan socioeconomic index, with higher scores indicating higher socioeconomic status.

Analysis

The analysis is conducted in three stages.[7] First, a baseline regression model is estimated with the dependent variable (criminal offending) regressed on deviant peers and four sanction threat variables, while controlling for the common antecedent variables. This model is followed by a number of interactive models, which estimate whether each of the hypothesized sanction threat variables *individually* reduces deviant peer influence on criminal offending. The final interactive model is estimated with all the interactive terms included *simultaneously* to estimate the relative importance of the sanction threat variables in reducing deviant peer effect on criminal offending.

Results

The results of the regression analysis are reported in Table 1. The table includes 1) a baseline model (*Baseline*) with criminal offending regressed on deviant peers, four sanction threat variables, and all the common antecedent variables; and 2) a set of interactive models with interactive terms added to the baseline model one at a time (*Interactive I – IV*) and simultaneously (*Interactive V*).

Baseline Model

As shown in Column 1 (*Baseline*, Table 1), deviant peers are significantly related to self-reported level of criminal offending. The positive coefficient (β = .25) indicates that higher levels of peer deviance are associated with greater levels of self-offending. In addition, internal sanction threat is inversely related to criminal offending. The negative coefficient (β = -.13) indicates that those with higher levels of internal sanction threat are less likely to engage in illegal activities. All of these relationships are in the expected directions. Also as expected, previous level of criminal offending predicts current offending. The stability effect is strong (β = .42). In addition, Hispanic Americans reported more offending net of all the other socio-demographic correlates. The effects of other sanction threat variables on criminal offending are in the expected directions but are not statistically significant.

Interactive Models

A main focus of this study is to address whether simultaneous presence of sanction threats may individually reduce deviant peer influence on criminal offending. Thus, in the next four interactive models, interactive terms were added to the baseline model one a time. The results of these analyses are shown in *Interactive I – IV* (Columns 2-5).

Hypotheses 1, 3, 5 anticipate that each of the hypothesized sanction threat variables will reduce the relationship between deviant peers and criminal offending. As shown (*Interactive I – IV*), these hypotheses are supported that each of the interactive terms is significantly related to criminal offending individually (two interactive terms used for measuring perceived informal sanction). The effects of the interactive terms are all in the inverse directions. The main effects remain quite similar to the baseline model except for slight changes in the strength of the coefficients. Thus, the positive main effect of deviant peers on criminal offending in the interactive models indicates that, on the average, association with criminal peers increases self-reported involvement in criminal offending while controlling for previous level of offending and other common antecedent variables (measured in the standardized scores). The significant interactive effects indicate that the effect of deviant peers on self-offending varies by the levels of sanction threat variables. Specifically, the inverse effects indicate that with a unit increase in the standardized measures of the sanction threat variables, the effects of deviant peers on criminal offending (or the slopes) are reduced by the amount of the interactive effects. Take *Interactive I* (see Table 1) for example, the effect (or the slope) of deviant peers on criminal offending with internal sanction threat at the mean is β = .16 [i.e., .16 + (-.23) (0)]. However, when internal sanction threat is one standardized unit above the mean (i.e., stronger internal sanction threat), the effect (the slope) of criminal peers on self-offending is β = -.07 [i.e., .16 + (-.23) (1)]. In contrast, when the internal sanction is at one standardized unit below the mean (i.e., weaker internal sanction threat), the slope is β = .39 [i.e., .16 + (-.23) (-1)]. The observed effects of hypothesized common antecedent variables remain identical to those in the baseline model.

To examine whether these different aspects of sanction threats simultaneously reduce deviant peer effect on criminal offending and the relative importance of these sanction threat variables in mitigating deviant

Table 1. The moderating influences of internal and perceived external sanction threats on the relationship between deviant peer associations and criminal offending, controlling for common antecedent variables (N = 1,159).

Variables	*Baseline*	*Interactive I*	*Interactive II*	*Interactive III*	*Interactive IV*	*Interactive V*
Deviant Peers	0.25***	0.16***	0.23***	0.22***	0.23***	0.15***
Internal Sanction	-0.13**	-0.07**	-0.11***	-0.12**	-0.12**	-0.07**
Informal Sanction (Parent Disapproval)	-0.04	-0.04	-0.03	-0.04	-0.04	-0.04
Informal Sanction (Coworker Disapproval)	-0.01	-0.01	-0.02	-0.00	-0.02	-0.02
Formal Sanction (Perceived Threat of Arrest)	-0.02	-0.01	-0.01	-0.01	-0.00	-0.01
Peers x Internal Sanction		-0.23***				-0.16***
Peers x Parent Disapproval			-0.15***			-0.09***
Peers x Coworker Disapproval				-0.11**		-0.05*
Peers x Perceived Threat of Arrest					-0.10***	-0.03
Male	0.02	0.02	0.02	0.02	0.02	0.02
Age	0.02	0.03	0.02	0.03	0.03	0.02
Black	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04
Hispanic	0.12***	0.11***	0.11***	0.11***	0.11***	0.11***
Married	-0.04	-0.04	-0.03	-0.03	-0.04	-0.04
Parenthood	0.04	0.03	0.03	0.03	0.03	0.03
SES	-0.03	-0.04	-0.03	-0.02	-0.03	-0.03
Time with Friend	0.03	0.03	0.03	0.03	0.03	0.03
Importance of Friend	0.01	0.02	0.02	0.00	0.01	0.01
Urban Residence	0.00	0.01	0.01	0.01	0.01	0.00
Previous Offending	0.42***	0.39***	0.40***	0.41***	0.41***	0.39***
Adjusted R^2	0.45	0.48	0.48	0.47	0.47	0.50

Note: Standardized effects are shown. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed).

peer influence (see Hypotheses 2 and 4), the interactive model is estimated again with all the interactive terms added simultaneously to the model. The result is shown in the last column of Table 1 (*Interactive V*).

As shown (*Interactive V*), three of the four interactive terms remain statistically significant when they are estimated simultaneously. Although their coefficients are slightly weaker, these effects remain in the same direction as when they are estimated individually (see *Interactive I – IV*). These results indicate that presence of internal sanction as well as the anticipated disapproval of significant others (i.e., parents and coworkers) jointly reduce the influence of deviant peers on criminal offending. The only exception is the interactive term between peer association and perceived threat of arrest which is still in the inverse direction but no longer statistically significant. The absence of this interactive effect thus indicates that perceived threat of arrest does not reduce deviant peer effect over and beyond the internal and informal sanction variables. Finally, the relative strengths of the sanction threat variables are assessed by the size of the regression coefficients. As shown, the strongest interactive effect involves internal sanction (β = -.16). This is followed by perceived parental disapproval, which approximates the effect of internal sanction threat (β = -.09). The anticipated disapproval of coworkers comes in the third. The effect is significant but much weaker (β = -.05). Again, the perceived threat of arrest (formal sanction) is not statistically significant. These results thus support Hypotheses 2 and 4 that internal sanction is more effective than informal sanction in counteracting deviant peer influence, which is more effective than formal sanction threat.

Figures 1-3 give a graphic representation of the three interactive effects that have reached statistically significant level in the comprehensive model (i.e., *Interactive V*, Table 1). Thus the predicted values of deviant peers on criminal offending are examined at three levels of sanction threat variables: namely, one standardized unit below the mean (Mean – 1SD), at the mean (Mean), and one standardized unit above the mean (Mean + 1SD). For symmetric purpose, deviant peers are also highlighted at three focal points (i.e., Mean – 1SD, Mean, and Mean + 1SD).[8]

As shown (Figures 1-3), in general, deviant peers are positively related to criminal offending (the lines generally go up), indicating that those who reported more deviant friends are expected to commit more crime. However, the effect of deviant peers on criminal offending also varies by levels of sanction threat variables. When sanction threat variables are at low levels (e.g., Mean – 1SD), the lines are much steeper, suggesting that the influence of deviant peers on criminal offending is strong when perceived sanction threats are low. However, as sanction threat variables reach higher levels (e.g., Mean + 1SD), the effects of deviant peers on criminal offending are much reduced (i.e., the lines are flattened), indicating that peer influences on criminal offending are weaker when perceived sanction threats are higher.[9] Finally, the moderating effect of sanction threat variables is most obvious (strongest) in the case of internal sanction threat (see Figure 1 vs. Figures 2 & 3), followed by perceived parental disapproval (see Figure 2), and then perceived coworker disapproval (see Figure 3) respectively.

The findings reported so far support the hypotheses that internal and informal sanction threats individually and concurrently reduce deviant peer influence on criminal offending. One may wonder, however, whether the observed moderating effects of internal and informal sanction threats may be limited to certain social class (Tittle 1980). For example, it is arguable that due to the differential socialization emphasis, moral conscience

Figure 1. Deviant Peer Associations on Criminal Offending by levels of Internal Sanction Threat.

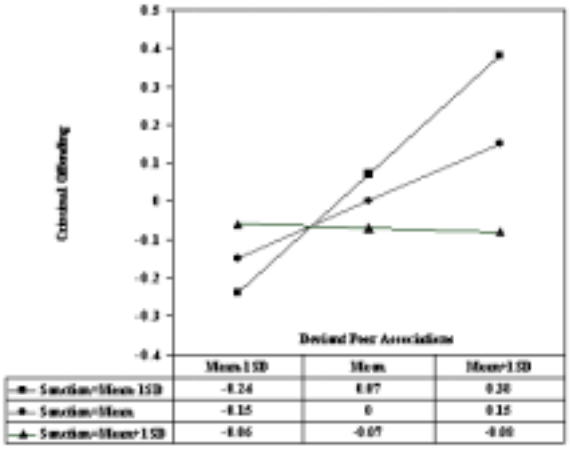
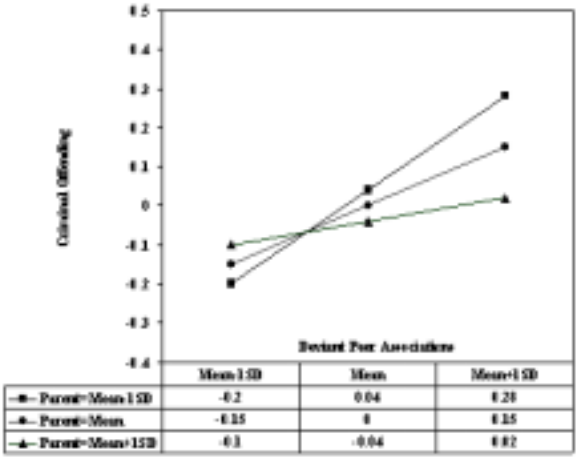
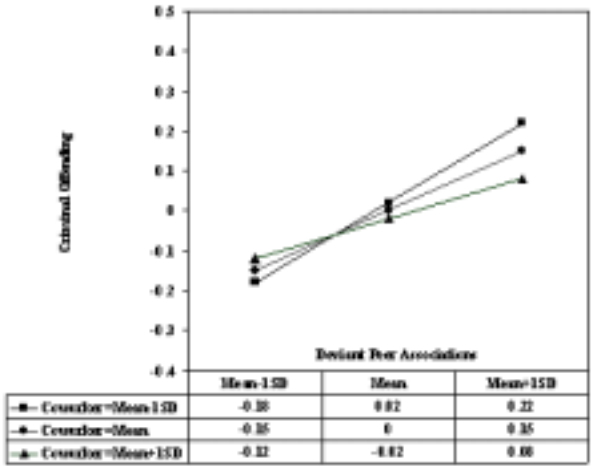


Figure 2. Deviant Peer Associations on Criminal Offending by Levels of Perceived Parent Disapproval.



and informal sanctions may be more effective in deterring crime of upper than lower classes. Thus to test the validity of this claim, additional analysis was performed: three third-way interactive terms (i.e., deviant peers x internal sanction threat x social class; deviant peers x perceived parental disapproval x social class; deviant peers x perceived co-worker disapproval x social class) were constructed and then entered into the regression model (i.e., *Interactive V*, Table 1) containing all the appropriate second-order interactive terms (i.e., deviant peers x internal/informal sanction threats; deviant peers x social class; internal/informal sanction threats x social class) and common antecedent variables. Social class is measured by the Duncan socioeconomic index.

Figure 3. Deviant Peer Associations on Criminal Offending by Levels of Perceived Co-worker Disapproval.



This analysis yielded results (available upon request) partially consistent with the earlier speculation, namely the moderating effect of internal sanction threat is slightly stronger when social class is at higher (e.g., 1 SD above the mean) than lower levels (1 SD below the mean). However, the moderating effects of informal sanction threats (i.e., perceived parental and co-worker disapproval) do not show significant differences by levels of social class.

Another question of concern arising from the findings of the present study is that perceived threat of arrest does not deter deviant peer influence over and above the internal and informal sanction threat variables. One may wonder, then, whether perception of formal threat may deter crime when internal sanction threat is low. Scholars in the past (e.g., Bachman, Paternoster and Ward 1992; Paternoster and Simpson 1996) have noted that formal punishment may deter crime when moral restraint is weak. Thus it is likely that perception of formal punishment may reduce deviant peer influence only at low levels of internal sanction threat. To explore this question, regression model is estimated again with a third-order interactive term (i.e., deviant peers x perceived threat of arrest x internal sanction threat) added to the model containing all the second-order interactive terms (deviant peers x perceived threat of arrest; deviant peers x internal sanction threat; perceived threat of arrest x internal sanction) and common antecedent variables. This analysis yielded results quite consistent with previous reports (e.g., Bachman, Paternoster and Ward 1992; Paternoster and Simpson 1996), that is, perceived formal arrest has a significant effect in reducing deviant peer influence only when internal sanction threat is at low levels (result available upon request).

Summary and Discussion

In summary, this study sets out to address two important research questions: that is, whether or not sanction threats may counteract deviant peer influence on criminal offending, and if so which aspect of sanction threats is most effective. In general, the analyses of the study yielded a number of important findings that are quite consistent with the hypothesized relationships. First, association with deviant peers is significantly related to criminal offending after controlling for earlier level of offending and other common antecedent variables, and the effect of peers on self-offending is next in strength to the stability effect. This observation replicates numerous other studies that have observed similar deviant peer effects, although mostly among younger populations (e.g., Aseltine 1995; Matsueda and Anderson 1998; Warr 1993a). This finding is also consistent with the principles of social learning theory (Akers 1985; Sutherland 1947) that posit deviant peers as influencing self-offending, although the present study does not determine the extent to which peer effect is truly causal or it might be partially attributed to self-selection (see Gottfredson and Hirschi 1990 for details).

Second, internal sanction is inversely related to criminal offending. Those who anticipate shame or guilt over committing criminal acts are less likely to engage in illegal activities. Further, those who anticipate shame in committing illegal acts are also less susceptible to deviant peer influence. These observations thus support the contention of many others (e.g., Braithwaite 1989) that instilling inner conscience or moral barriers is important in combating crime and deviance.

Third, the anticipated disapproval of parents and coworkers also reduces the influence of deviant peers on self-offending. Of the two variables, perceived parental disapproval is slightly more effective in reducing deviant peer influence. This finding is interesting given that it has been noted that parent influence tends to

weaken as children mature. This observation seems to point out that perhaps despite the weakening of parental influence, parents' opinions still matter when it comes to restraining illegal involvement. As the results demonstrate, parental disapproval is more potent than the threat of coworkers' disapproval in deterring criminal involvement among this relatively more mature group of respondents.

Fourth, the internal sanction threat and the anticipated disapproval of significant others simultaneously reduce deviant peer effect on criminal offending. These results thus suggest that the presence of both inner barriers and anticipated negative reactions of significant others is more effective in mitigating criminal peer influence than either one of these variables by itself.

Fifth, the perceived threat of formal punishment (arrest) is significant only when it is estimated in the individual model. In the presence of other sanction threat variables, perceived formal punishment does not counteract influence of deviant peers over and beyond the effects of the other hypothesized sanction threat variables. The relatively weaker effect of formal sanction threat thus suggests that, at least, perceived threat of formal arrest does not further reduce criminal peer influence as long as individuals have strong moral conscience. This claim is supported in the subsequent follow-up analysis, which showed that perception of formal punishment (i.e. arrest) only reduces deviant peer influence when internal inhibition is weak (Bachman et al. 1992; Paternoster and Simpson 1996).

Finally, it is interesting to note that the effect of internal sanction in counteracting deviant peers is stronger for upper than lower classes (Tittle 1980). This observation may be partially attributed to differential socialization influence such that upper classes may rely more heavily on guilt associations in inhibiting socially proscribed behaviors.

These results should be viewed with caution due to a number of methodological limitations. First, the influence of deviant peers on criminal offending is observed using respondents' report of friends engaging in illegal behaviors. Use of respondents' report of peer delinquency alone as a measure of deviant peer associations has generated concerns in recent years (e.g., Aseltine 1995). Unfortunately, the NYS does not include reports of deviant peers from other sources such as friends' report of their own deviance. To some extent, though, social scientists still disagree as to what constitutes the best measurement technique for reflecting peer deviance. While some have suggested that self-report of peer deviance may be inflated due to its shared variance with reports of one's own criminal involvement (see Zhang and Messner 2000), others, however, have contended that peer participation in crime measured by respondents' reports, especially in the NYS data, may still be valid (e.g., Warr 1993b). At any rate, readers should be aware of this measurement limitation.

Second, the present study examines a limited number of external sanction threats in modifying deviant peer influence. For informal sanctions, it is limited to the perceived disapprovals of parents and coworkers. Other aspects of informal sanction threats, such as perceived disapproval of spouse, romantic partners, and neighbors, are not examined. Further, for formal sanction, it is limited to perceived chance of arrest rather than actual punishment. Future studies may broaden the conceptualization of external sanction threats to include additional aspects of sanctions in counteracting deviant influences on criminal offending.

Third, the deterrent effects of sanction threat variables against deviant peers were observed using a more mature sample. Although there is no reason to believe that such effects may be otherwise, it is likely that the effects of sanction threats may vary for individuals at different maturity levels. Thus future studies need to replicate these findings before generalizing them to other age groups.

While the generalizations of these findings may be dependent upon future replications with better measurement and design, the present study is important in integrating two theoretical traditions, i.e., social learning and deterrence perspectives and by demonstrating how internal and perceived aspects of external sanction threats may individually and concomitantly mitigate deviant peer influence on self-offending. If these results are replicated, programs should be directed at strengthening inner moral conscience as well as building mechanisms of informal social responses in addition to encouraging conventional peer connections in combating crime and deviance. Further, the power of formal punishment in combating crime should not be neglected especially when dealing with groups that are lacking in internal moral inhibitions.

ENDNOTES

[1] Using cross-sectional data generates concern over the issue of causal order. Unfortunately, the NYS data are not extremely well suited for a longitudinal test of these hypotheses due to attrition and three-year time lag between the interviews (i.e., 1981, 1984, and 1987). Nevertheless, for exploratory purpose, analyses were conducted using three waves of the NYS data: common antecedents were drawn from the 1981 interview, the independent and moderating variables were taken from the 1984 data, while the dependent variable was derived from the 1987 interview (some variations in component items). In general, these analyses confirmed the cross-

sectional findings with the exception that coefficients are generally weaker.

[2] 337 cases were lost due to item non-response. Item non-response was mainly attributed to two measures. One measure is in regard to 'the perceived disapproval of coworkers' (a moderating variable) that accounts for 61% of missing cases. Another source of missing (54%, overlapping with 'perceived coworker disapproval') results from either one of two control variables regarding 'importance of friends' and 'amount of time spent with friends during weekends'. In order to assess the potential bias introduced by item non-response, two analyses were performed. First, respondents present in the study were compared with those lost to attrition in regard to mean distributions of key independent variables. This is followed by a comparison of results from multivariate models (as those reported later) with or without the variables of high attrition. In general, respondents lost to attrition scored slightly higher in deviant peer associations but lower in perceived parental disapproval. Multivariate analyses, however, showed almost identical patterns with the exception that coefficients are slightly stronger if measures of high attrition were removed, and hence the analyses were based on a larger sample size. These results thus point to the conclusion that findings reported in this study may be slightly conservative. That is, should the missing respondents be included, the observed relationships may be stronger.

[3] Multicollinearity is not a problem in the analyses since none of the variance inflation factors (Fox 1991) exceeded the threshold point of 4.0, which is generally considered as suggesting a multicollinearity problem (see Brezina and Piquero 2001). The highest variance inflation factor is 2.7.

[4] Although internal consistency coefficient is provided, it must be noted that test-retest approach is more appropriate for assessing reliability of behavioral indices (see Huizinga and Elliott 1986; Thornberry and Krohn 2000 for details). Unfortunately, current data cannot be used to assess test-retest reliability. Nevertheless, researchers in the past have shown self-report index of criminal offending to be highly reliable using test-retest approach (Huizinga and Elliott 1986; Thornberry and Krohn 2000) and that test-retest coefficients tend to be positively correlated with internal consistency coefficients (Thornberry and Krohn 2000).

[5] More specifically, the index includes two items on vandalizing property (family or other), three items on theft (stealing things worth less than $50, $50, or more than $50), and two other items on selling drugs (marijuana and hard drugs respectively). Other items in the index include buying stolen goods, attacking others, engaging in gang fights, breaking into building, taking others' vehicles, hitting parents, setting fire to property, and carrying hidden weapons.

[6] Factor analysis distinguishes variance related to common factors (e.g., criminal offending) from variance attributed to measurement errors. Thus factor weights reflect 'purified" amount of crime committed by respondents (Bollen 1989), although analyses based on summation of simple frequency scores do not alter the results reported here.

[7] To assess the impact of skewed distribution, analyses were performed with and without the log transformation of the dependent variable. The results were almost identical. The findings reported are without transformation for ease of interpretation.

[8] Assuming deviant peers = X and internal sanction threat = Z, the predicted values of criminal offending (Y) can be obtained using the formula: $Y = \beta_1 X + \beta_2 Z + \beta_3 XZ$. Thus drawing on *Interactive V* (Table 1), when deviant peers and internal sanction threat are both at the means, the predicted value of criminal offending is equal to 0 [i.e., .15 (0) + (-.07) (0) + (-.16) (0) (0) = 0]; when deviant peers and internal sanction threat are both at 1 SD above the means (i.e., high peer association and high internal sanction), the predicted value is -.08 [namely, .15(1) + (-.07) (1) + (-.16) (1) (1) = -.08]. Further, if deviant peer is 1 SD above the mean (high deviant peers) but internal sanction threat is 1 SD below the mean (low internal sanction), it is .38 [i.e., .15 (1) + (-.07) (-1) + (-.16) (1) (-1) = .38]. The same rule applies to calculating predicted values with other moderating variables (i.e., informal sanction threat variables).

[9] Note that the lines below the intersection points (see Figures 1-3) seem to suggest a reversal of sanction threat effect on criminal offending (i.e., higher sanction threat is linked to higher crime). However, this observation may be an artifact of centering the data rather than indicating meaningful differences. An alternative of plotting the data without centering the variables yields identical patterns of interaction (as shown) except that the reversed effect is not observed. Thus the result supports the conclusion that internal/informal sanction threats are effective in deterring crime when individuals are exposed to deviant peer influence. Sanction threats do not exert much effect in the absence of deviant peer influence.

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