



Differential association in group and solo offending

Andy Hochstetler^{a,*}, Heith Copes^b, Matt DeLisi^a

^a*Department of Sociology, Iowa State University, 203E East Hall, Ames, IA 50011-1070, USA*

^b*Department of Criminal Justice, University of Alabama-Birmingham, Birmingham, AL 35294, USA*

Abstract

The relationship between association with deviant peers and offending is a longstanding interest in criminology, however, the mechanisms that produce the relationship are seldom investigated. As a result, theoretical links between differential association and offending are often speculative. Differential association theorists maintain that interaction with deviant peers results in cognitive changes that make offending more attractive. Others contend that peers' influence on offending is enacted via group situations where associates encourage crime by offering opportunities or situational inducements. Using data from the National Youth Survey (NYS), this study explored the influence of delinquent friends' behaviors and attitudes on general, group, and solo offending for three crimes. OLS regression analyses supported differential association theory as originally written and no evidence was found that its effects were contingent on the presence of co-offenders. Implications of this exploratory analysis for differential association theory are provided along with directions for future research.

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Introduction

Criminologists devote as much attention to the relationship between having delinquent friends and delinquent behavior as they do any other topic. Since Sutherland (1947) formalized the notion that definitions favorable to crime are learned by interacting with people who find lawbreaking acceptable, hundreds of articles have been published on the topic. A search of Sociological Abstracts reveals that more than eighty articles indexed since 1990 include the words "differential association" in their abstract or title (Cambridge Scientific Abstracts, 2001). Today, it is common for researchers to incorporate the influence or presence of deviant friends as variables in causal models even when they are not testing differential association. This is especially true with most attempts at theoretical integration (e.g., Akers & Lee,

1996; Elliott, Ageton, & Canter, 1979; Heimer & Matsueda, 1994; Kaplan & Liu, 1999; Matsueda, 1992; Mazerolle & Maahs, 2000). As a result, the central concepts from differential association appear in criminological studies of social support, self-control, identity, the life-course, and most other areas of research that rely on individual data. Additionally, friends' attitudes and behaviors are prominent parts of criminology's most esteemed and heavily referenced individual-level data sets (Elliott & Ageton, 1980; Jensen, 1972; Wolfgang, Figlio, & Sellin, 1972). In sum, differential association is a pillar of criminological thought and research.

One reason for the widespread acceptance of differential association is that investigators consistently find that individuals are more likely to offend themselves if they associate with peers who condone and commit crime (Alarid, Burton, & Cullen, 2000; Costello & Vowell, 1999; Elliott, Huizinga, & Menard, 1989; Erickson & Jensen, 1977; Lauritsen, 1993; Matsueda, 1982; Matsueda & Anderson, 1998; Mears, Ploeger, & Warr, 1998; Reiss, 1986,

* Corresponding author. Tel.: +1-515-294-2481; fax: +1-515-294-2303.

E-mail address: hochstet@iastate.edu (A. Hochstetler).

1988; Reiss & Rhodes, 1964; Warr, 1993; Warr & Stafford, 1991). Indeed, the significant relationship between peer associations and lawbreaking has been produced by an array of studies employing diverse methodologies and sources of data. These range from qualitative research based on semistructured interviews with convicted felons (Hochstetler, 2001) to longitudinal survey research from the National Youth Survey (NYS) (Lauritsen, 1993; Menard & Elliott, 1990, 1994; Warr, 1993) and Cambridge Study in Delinquent Development (Reiss & Farrington, 1991). It is clear that peer networks and associations are especially significant for understanding juvenile delinquency since “most young offenders have co-offenders in their offending and associate in other group activities with still other offenders” (Reiss, 1986, p. 128).

There is, however, considerable controversy about why associating with criminal or delinquent friends affects offending. More than a decade ago, Warr and Stafford (1991, p. 851) noted that “although the association between delinquent friends and delinquent behavior is well established, the mechanism by which delinquency is socially transmitted remains unclear.” Unfortunately, the fog surrounding the understanding of the mechanism has cleared only slightly.

Investigators often find support for the central proposition of traditional differential association theory. In survey research, friends’ attitudes typically correlate with attitudes held by respondents and directly or indirectly with respondent offending. There are at least three reasons to be skeptical of differential association theory in its most simple form, however. First, it appears that individuals’ perceptions of their friends’ behaviors influence offending more significantly than does their perception that friends have crime-condoning attitudes (cf. Costello & Vowell, 1999; Heimer & Matsueda, 1994; Matsueda & Anderson, 1998; Warr & Stafford, 1991). The finding that friends’ behaviors significantly influence offending does not contradict differential association theory, but it does undermine the claim that attitudes are transmitted during noncriminal acts and casual interaction with peers. Therefore, it does not appear that attitudinal transmission or transformation is the most important part of learning crime as implied in the original statement of differential association theory.

A second perplexing finding is that recent peer associations are more significant predictors of offending than longstanding relationships (Warr, 1993). Recent interaction with delinquent peer groups has a significant effect on offending despite the fact that these groups are situational, transitory, and generally disorganized (Matsueda, 1992; Reiss, 1988; Reiss &

Farrington, 1991; Reiss & Rhodes, 1964; Warr, 1996). This suggests that delinquent friends’ influence does not alter individuals’ thinking so much as it has temporary and immediate effects on their actions. The effects of differential association may not be the result of cumulative life-long learning from interaction with friends. Instead, immediate and current relationships with delinquent peers result in criminal behavior, whatever the mechanism explaining the influence of these recent relationships.

A third and related complication is that friends’ attitudes and behaviors have direct effects on offending that are not mediated by one’s own attitudes (Costello & Vowell, 1999). This finding suggests that associating with deviant friends influences individual offending levels in ways that have nothing to do with the offender’s attitudes about crime. There are several well-known theoretical interpretations of alternate paths from friend’s behavior to crime that might explain this direct effect. For example, Cloward and Ohlin (1960) contend that peers are important primarily because they provide differential “performance structures,” including values, skills, and social approval that enable crime. In his symbolic interactionist theory, Matsueda (1992) (Heimer & Matsueda, 1994) suggests that delinquency is the outcome of “reflected appraisals” in which the self is situationally produced by delinquent peer influences. McCarthy (1996) suggests that, without criminal peers, some potential offenders may never be provided the means to commit a crime. By definition, these criminally disadvantaged persons will not have reliable criminal contacts or access to co-offenders needed to accomplish some offenses. Criminal situations and opportunities are easily available to those who, by accident or management, surround themselves with offenders.

Most investigators neglect the most parsimonious explanation for friends’ influences. Those who associate with offenders are obviously more likely to find themselves in a criminal event. No learning or transference of attitudes from disreputable contacts is necessary if others are present to commit or encourage crime. The current authors are aware of no studies of differential association that differentiate between crimes committed alone and with others. Moreover, adolescents are the typical subjects of differential association studies and especially likely to co-offend (Reiss, 1986, 1988). This magnifies the danger of assuming that differential association operates by attitude transference or other cognitive manifestations of interaction with delinquents. If it is accepted that associations with criminal peers are important, it must also be acknowledged that the influence of peers may operate without the transference of attitudes from the model to the observer (Warr & Stafford, 1991). Deviant peers potentially

foster situational inducements and group processes that produce offending (Hindelang, 1976; Hochstetler, 2001; McCarthy, Hagan, & Cohen, 1998). Therefore, at least part of what appears to be the effects of learning by association may actually reflect the fact that most offenders are under the direct influence of peers when they offend.

Research purpose

The current study examines the effects of peer behavior, peer attitudes, and respondent attitudes on criminal offending, solo, and group offending. Any significant influence from association with friends that exists in solo crimes is extra-situational and explained by cognitive effects. The presence of friends' attitudes and behaviors is significant for solo offending, this suggests that attitude transference or learning is a significant component of differential association and that differential association operates similarly even when co-offenders are not present.

Co-offenders can exert immediate pressures, set an influential example, and provide opportunities to offend, in addition to any attitude transference that persists when friends are not present. Therefore, it is expected that one's own attitudes will mediate the relationship between friends' attitudes and behaviors for solo crimes. This may not be the case for group crimes where situational encouragement and friends' choices are potentially more important than learning definitions favorable to crime. Differentiating between crimes committed by groups and an individual offender allows investigators to assess whether findings for core theoretical variables are contingent on the presence or absence of others. In so doing, this study will examine whether friends' attitudes and behaviors are only important when friends are present. This might raise serious questions about the importance of attitude transmission, and as a result would challenge findings from previous tests of differential association that did not disaggregate dependent variables into group and solo crimes. Conversely, significant effects for differential association variables in the presence and absence of co-offenders would provide strong support for the theory.

Methods

Sample

Data from the NYS were used to examine the effects of differential association on crimes committed alone and by groups.¹ The NYS is a panel study of a national probability sample of persons that were

ages eleven to seventeen in 1976 (Elliott & Ageton, 1980). The current analyses were based on 1,492 youths who participated in wave 6 in 1983 with lagged independent variables drawn from wave 5 in 1980.² Most analysts of NYS data use offense counts, or some transformation of offense counts for the year previous to the interview as their dependent variables. The current analyses required data on whether an offense was committed in a group or alone. Regrettably, group-offending data were not available for all delinquent acts recorded in the NYS. Fortunately, follow-up questions about a subset of serious criminal offenses had respondents' report if their most recent offense was committed in a group or alone. These data did not allow for the investigation of the frequency of solo and group offending, but they did provide a measure of group offending.

Independent variables

Three independent variables were used (a) respondent attitudes towards deviance, (b) perceptions of friends' attitudes toward deviance, and (c) perceptions of friends' offending behaviors.³ The respondent's own attitudes toward a variety of acts were measured using the questions, "How wrong is it for someone your age to [act]?" Responses ranged from (*not wrong at all*=1 to *very wrong*=4). Attitudes of friends were measured by asking if friends would approve or disapprove of these same behaviors. Responses ranged from (*strongly approve*=1 to *strongly disapprove*=5). The direction of the attitude scales was recoded so that a high score indicated approval of the act. Friends' participation in a variety of deviant acts was measured by asking respondents to estimate how many people in their immediate friendship network participated in the acts in the past year. Responses ranged from (*none*=1 to *all*=5). These acts were combined to form additive measures of friends' attitudes and deviance. Attitudes and deviant acts of friends were general measures, but the dependent variables referred to a specific crime. For example, the current analyses did not examine whether attitudes toward theft contributed to theft, but whether attitudes condoning a variety of deviant acts contributed to theft.

Dependent variables

Dichotomous codes measured the presence or absence of theft, assault, and vandalism. Total offending was operationalized by (0=*no crime*, 1=*crime*), group offending was operationalized as (0=*no or solo crime*, 1=*group crime*), and solo offending was operationalized as (0=*no or group crime*, 1=*solo*

crime). Each criminal offense was examined for each respondent. The crimes were chosen because they were relatively prevalent in the NYS, encompassed property and personal offending, and were likely to be committed in a group context. Moreover, the questions about group offending were difficult to interpret for some crimes. For example, it is unclear what is meant when respondents claim that they sell drugs in a group by comparison to those who claim to sell alone.⁴ The personal and property crimes herein were among those most commonly committed with delinquent peers (Reiss, 1986, pp. 134–135; Reiss & Rhodes, 1964).

Analytical technique

Given the dichotomous dependent variables, logistic regression was used for data estimation. This technique is more appropriate for analyses of NYS data than frequency of offenses or transformations of frequencies. Examination of frequencies greatly enhances the effects of an extremely small number of persistent offenders on findings. Very few respondents in the NYS repeatedly commit property and personal crimes. For example, nearly 98 percent of NYS respondents either did not commit each of the acts examined or committed them only once in the referenced time period. Therefore, examining crime commission as a dichotomous variable is appropriate and measuring group participation by asking only about the last crime is defensible.

In Models 1, 2, and 3, the results of regressions of offending variables on the most critical variables

from differential associations (friends' behaviors and attitudes) were presented. In Models 4 and 5, respondent's attitudes were presented to determine the extent to which peer influence operated indirectly through respondent attitudes as theorized in differential association theory. Effects of friends' attitudes and behaviors were examined separately to determine the extent to which they were mediated by own attitudes.⁵ According to differential association theory, the direct effects of these variables should be mediated by own attitudes. The current research examined whether differential association operated differently for group offenders and solo offenders.⁶

Findings

Both friends' attitudes and behaviors were significant determinants of all three forms of criminal offending. Unstandardized logistic regression coefficients for theft (Table 1), assault (Table 2), and vandalism (Table 3) appear in the following pages of this study. Warr and Stafford (1991) found that for cheating and larceny in previous waves of NYS data, peer attitudes did not have significant direct effects on the number of offenses committed. The current study found more robust effects for friends' attitudes on the offense variables. Own attitudes also significantly correlated with offending for all three crimes. To test whether respondent attitudes explained the effects of friends' attitudes and behaviors, friend variables and own attitudes were entered into the same equation. Both variables retained their significance as predic-

Table 1
Logistic regression coefficients for (1) total, (2) group, and (3) solo theft

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<i>(1) Total theft</i>					
Own attitude	0.101 * (1.160)	–	–	0.141 (1.151)	0.010 (1.017)
Friend behavior	–	0.151 * (1.162)	–	0.033 * (1.033)	–
Friend attitude	–	–	0.162 * (1.175)	–	0.152 * (1.165)
– 2 LL	245.97	225.41	262.08	245.62	224.22
<i>(2) Group theft</i>					
Own attitude	0.091 (1.095)	–	–	0.023 (1.020)	0.020 (1.020)
Friend behavior	–	0.138 * (1.148)	–	0.131 * (1.140)	–
Friend attitude	–	–	0.135 * (1.149)	–	0.123 * (1.131)
– 2 LL	146.94	134.75	151.98	134.42	146.71
<i>(3) Solo theft</i>					
Own attitude	0.127 * (1.135)	–	–	0.060 (1.062)	0.036 (1.037)
Friend behavior	–	0.155 * (1.167)	–	0.139 * (1.149)	–
Friend attitude	–	–	0.185 * (1.203)	–	0.167 * (1.182)
– 2 LL	137.30	120.61	129.05	118.59	128.23

Exp(B) are shown in parentheses.

* P < .01.

Table 2
Logistic regression coefficients for (1) total, (2) group, and (3) solo assault

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<i>(1) Total assault</i>					
Own attitude	0.093 * (1.098)	–	–	0.060 * (1.062)	0.031 (1.032)
Friend behavior	–	0.095 * (1.099)	–	0.074 * (1.077)	–
Friend attitude	–	–	0.126 * (1.134)	–	0.104 * (1.110)
– 2 LL	532.36	524.42	518.42	511.56	516.30
<i>(2) Group assault</i>					
Own attitude	0.251 * (1.286)	–	–	0.194 (1.214)	0.179 (1.196)
Friend behavior	–	0.170 * (1.185)	–	0.122 * (1.129)	–
Friend attitude	–	–	0.228 * (1.256)	–	0.147 (1.159)
– 2 LL	34.23	34.36	36.03	30.28	33.09
<i>(3) Solo assault</i>					
Own attitude	0.087 * (1.091)	–	–	0.061 * (1.063)	0.031 (1.032)
Friend behavior	–	0.081 * (1.084)	–	0.058 * (1.060)	–
Friend attitude	–	–	0.115 * (1.121)	–	0.093 * (1.097)
– 2 LL	472.43	470.40	463.58	461.64	461.60

Exp(B) are shown in parentheses.

* $P < .01$.

tors of total offending for all three crimes. This suggests that both friends' attitudes and friends' behaviors affected offending by means other than their influence on respondent attitudes.

Turning to group crime, all independent variables were significant predictors of group offending. Predictably, significance levels dropped since there were fewer cases of group offending than total offending. Nevertheless, findings revealed that the effects on group crime held independent of the effects on attitude; the influence of friends' attitudes only fell

to insignificant levels for assault. Friends' behaviors maintained its significance for all three crimes. The current analyses confirmed that it is a mistake to assume that own attitudes are the mechanism for transferring friends' influences into group crimes just as it would be a mistake to make the same claim for total offending.

Just as for total and group crime, all three independent variables were significant predictors of participation in solo crime. Both friends' attitudes and behaviors maintained their significant effects on solo

Table 3
Logistic regression coefficients for (1) total, (2) group, and (3) solo vandalism

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<i>(1) Total vandalism</i>					
Own attitude	0.083 * (1.086)	–	–	0.045 (1.046)	0.025 (1.026)
Friend behavior	–	0.095 * (1.099)	–	0.079 * (1.082)	–
Friend attitude	–	–	0.113 * (1.119)	–	0.095 * (1.100)
– 2 LL	462.81	447.59	452.83	442.97	451.55
<i>(2) Group vandalism</i>					
Own attitude	0.081 * (1.085)	–	–	0.047 * (1.049)	0.042 (1.043)
Friend behavior	–	0.087 * (1.091)	–	0.070 * (1.073)	–
Friend attitude	–	–	0.094 * (1.098)	–	0.063 (1.065)
– 2 LL	319.02	312.29	318.23	309.06	316.22
<i>(3) Solo vandalism</i>					
Own attitude	0.082 * (1.086)	–	–	0.040 (1.041)	0.007 (1.007)
Friend behavior	–	0.098 * (1.103)	–	0.085 * (1.089)	–
Friend attitude	–	–	0.137 * (1.146)	–	0.133 * (1.142)
– 2 LL	204.56	196.82	195.34	195.48	195.30

Exp(B) are shown in parentheses.

* $P < .01$.

offending controlling for own attitudes. This finding suggests that even when crime was accomplished alone, friends' attitudes and behaviors were relevant and the significance of these variables was not completely explained by the intervening effect of respondents' own attitudes.

Discussion and conclusion

Differential association theorists assert that friends' attitudes and behaviors affect crime indirectly through the transfer of criminogenic attitudes. Previous findings of direct effects, at least for friends' behaviors, called this claim into question (Matsueda & Heimer, 1987; Warr & Stafford, 1991). In the current analysis, nearly all of the effects of attitudes and behaviors remained significant predictors of offending when controlling for respondent attitudes. This was true for group and solo crime, suggesting that the effects of friends' attitudes and behaviors did not operate solely through respondents' attitudes. In fact, adding respondent attitudes to the equations had remarkably little impact, other than alleviating the significance of friends' attitudes for assault.

Previous investigators of differential association found unexpectedly weak relationships between respondent attitudes and offending relative to the direct effects of friends' attitudes or behaviors (Jaquith, 1981; Jensen, 1972; Matsueda & Anderson, 1998; Matsueda & Heimer, 1987; Warr & Stafford, 1991). For example, Warr and Stafford (1991) found that peer behavior had a strong direct effect on respondent behavior. In their words, "notwithstanding their own attitudes toward delinquency, then, adolescents are strongly influenced by the behavior of their friends." Using dichotomous dependent variables, the current study also found significant direct effects for both friends' attitudes and behaviors.

The current research revisited the relationship between friends' attitudes, respondent attitudes, and friends' behaviors to vandalism, theft, and assault. Since approval of crime by friends may manifest itself in offending by learning or through more direct avenues like situational inducements to offend, offenses committed by groups and solo offenders were examined. Generally, findings support differential association theory. Like prior studies, own attitudes did not seem to be the method of transferring friends' influences into criminal decisions. No support was found for the possibility that prior researchers neglected an important element when they failed to disaggregate crimes into group and solo events.

As expected, in initial equations friends' attitudes and behaviors were significant predictors of total offending. In addition, differential association varia-

bles appeared to influence offending through psychological mechanisms. Even if one's own crime condoning attitudes did not explain the entire effects of friends' attitudes and behaviors on offending, the findings for solo offending suggest that friends' influences are manifested by something that individual offenders bring to the situations of the offense. Significant results for friends' attitudes and behaviors for lone offenders lend support to differential association theory as originally formulated. Friends' influences can only operate on solo offending through extra-situational means. Presumably, an offender carries the influence of his or her friends even when offending alone. Again, significant effects for friends' influences controlling for own attitudes suggests that attitudes may not be the vehicle for transporting social influences into solo offenses or group offenses. Despite the support for differential association theory, the current results call into question its central notion that attitudes are the mechanism of transference between associates.

Admittedly, the current findings may be due to measurement problems, albeit ones that many differential association studies do not address. For example, respondents may know that their friends are deviant because they have repeatedly offended with them. Consequently, significant effects for friends' influences in the solo equations implied that crime is learned by transference of some sort.

Warr and Stafford (1991) suggested that convincing tests of differential association would need to ask questions about the intervening processes between friends' attitudes and behaviors and deviance. Do friends reward deviant behaviors? Does criminal profit vicariously reward friends of the offender? Do friends influence legitimate aspects of offenders' lives, say their goals or academic successes, and thereby influence deviance? Must friends' behaviors be witnessed to influence offending? How accurate are the perceptions of friends' behaviors? Why do the opinions of friends' shape decisions when they are not present? Is continued offending the result of continued contact with the same friends over time? While recent research is beginning to address some of these questions (Jang, 1999; Matsueda & Anderson, 1998; Menard & Elliott, 1994; Piquero & Paternoster, 1998; Reed & Rose, 1998), the criminological understanding of peer influence remains primitive.

The most important conclusions of this study were that neither own attitudes nor the situational influence of friends appeared to be the mechanism of transference. Within the constraints of the data, the current study has eliminated group influences as the mechanism of differential association. Hopefully, this research will inspire others to refine measures of

friendship influence. It is acknowledged that friends almost certainly affect criminal decision-making when they are present, but it is important to recognize that significant findings supporting differential association are not biased by failure to examine the presence or absence of co-offenders. It is unknown if the friends that influence subjects' attitudes also are their co-offenders. Furthermore, it is unclear which deviant friends matter most. Surely, the influence of delinquent friends varies by a number of variables. Females with deviant friends, for example, may be less likely to condone crime and more likely to fall into crime by happenstance since their crimes are less likely to be solitary (Decker, Redfern, & Smith, 1993). As offenders age, they are less likely to associate with others and probably are less susceptible to influences from casual associates.

Presently, the NYS is the most complete data set for testing differential association and the only nationally representative data set that includes questions on group offending. New panel data sets that speak to the issue are under construction, but these too will fall short of addressing many issues. Questions surrounding the potential sources of friends' influences will not be resolved until data that include both background information on subjects and detailed situational data on at least some of the offenses they commit are available.

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Notes

1. Analyses from these two waves are presented because they are not typically used in tests of differential association. Fortunately, the current findings generally replicated findings from other waves of the NYS. Analyses were also conducted on waves 4–5 and 6–7. Results were similar with the exception of diminished effects for friends' attitudes from waves 6 to 7. It should be noted that wave 7 was collected more than four years after wave 6 and this may explain the results.

2. Missing data for nonrespondents in wave 5 who were present in wave 6 were estimated with series means.

3. Control variables are not presented here because this study was an exploration of core theoretical variables. Traditional differential association theory does not speak to the effects of standard demographic control variables on offending, although they can be inferred. Nevertheless, exploratory analyses with control variables were conducted. Sex, social class, or race achieved powerful significance in most equations, but inclusion of these variables had little

effect on the results or conclusions pertaining to differential association. Models with control are available upon request.

4. Equations for total, group, and solo offending included varying numbers of offenders. Due to sample size fluctuations, fewer significant findings were expected moving from total to group to solo offending. Fortunately, differential association variables, especially friends' behaviors, strongly influenced offending in previous analyses and this makes the varying number of positive cases across models somewhat more valid.

5. Zero-order correlations of .51 between friends' attitudes and own attitudes and .22 between friend's behaviors and own attitudes are strong. Nearly all studies on the topic report similar findings. The current analyses did not emphasize the statement of differential association theory that own attitudes and friends' attitudes and behaviors were related, although it is certainly true.

6. Coefficients were not standardized because the meaning of standard units for dummy variables are difficult to interpret and the use of logged odds in logistic regression models complicates computation of a standard deviation. There are ways to calculate standardized coefficients (see Pampel, 2000). Unstandardized coefficients were used so that the reader could more easily interpret the effects on the dependent variable. Therefore, the current authors speak about the relationships between dependent and independent variables generally using significance tests and apparent changes in relative explanatory power when compared to competing variables examining total, group, and solo offending.

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