Fall 1983

Friends' Use and Adult Drug and Drinking Behavior: A Further Test of Differential Association Theory

R. Thomas Dull

Recommended Citation

RESEARCH NOTE

FRIENDS' USE AND ADULT DRUG AND DRINKING BEHAVIOR: A FURTHER TEST OF DIFFERENTIAL ASSOCIATION THEORY

R. Thomas Dull*

I. INTRODUCTION

Past research on drug behavior, especially at testing peer group influences, has tended to concentrate on high school and college populations. The purpose of this study is to find out the extent to which the theoretical and empirical findings are applicable to an adult population. This Note reports the findings of an analysis of self-reported drug use data representing a general Texas adult population. Zero-order correlation results provide strong support for extending the usefulness of differential association theory to the explanation of drug use within an adult population.

The most influential theory of cultural deviance is Edwin Sutherland's theory of differential association.[1] The third postulate of this theory states: "The principal part of the learning of [deviant] behavior occurs within intimate personal groups."[2] This study attempts to measure one's intimate personal groups in response to this postulate. Within intimate personal groups, value development and behavior learning, both deviant and nondeviant, take place. The basic principle of differential association theory is that a person becomes deviant because of an excess of learned definitions favorable to the violation of norms.

The differential association theory was tested by asking the question: "Of your four closest friends, how many would you say use 'certain

---

* Assistant Professor, Department of Criminal Justice, Memphis State University. Ph.D., Sam Houston State University, 1981; M.S., Michigan State University, 1975; B.S., San Jose State University, 1973.
[1] E. SUTHERLAND, PRINCIPLES OF CRIMINOLOGY (4th ed. 1947).
[2] E. SUTHERLAND & D. CRESSEY, CRIMINOLOGY 75 (9th ed. 1974).

drugs'?" To support the theory of differential association, it would be necessary to find a correlation between the number of drug-using friends and the individual propensity to use drugs.[3]

Drug use by one's friends has been an important variable in past research on drugs and drinking behavior.[4] In many of these studies "friends' use" has been specifically utilized as one test of differential association.[5] In fact, Kandel has stated that "[m]arijuana use by one's friends may not only be an important variable in explaining adolescent drug use, it may be the critical variable."[6]

Unfortunately, most drug research cannot directly support such statements for the general population since their samples are largely restricted to high school or college age.[7] The present study will use a general population rather than a juvenile population to determine whether differential association theory may be applicable only to young, beginning, or inexperienced users. This is especially crucial today when the drug users of a decade ago, the zenith of marijuana's popularity, are now adults.

This current research is a further test of differential association theory measured by looking specifically at close personal associates' drug behavior through an examination of the extent to which the theory and empirical findings are applicable to an adult population. Finally, we test the relationship controlling for age, sex, and race.

---

[3] To accurately measure Sutherland's concept of differential association it would be necessary to evaluate "definition" acquired by respondents in intimate personal groups. This study attempts to approximate differential association by measuring the perceived drug use of close associates. It is acknowledged that this is not a direct measurement of differential association, but it is consonant with some of the empirical literature that has attempted to measure differential association. *See* Short, *Differential Association and Delinquency*, 4 SOC. PROBS. 233 (1957).

[4] *See* Akers, Krohn, Lanza-Kaduce, & Radosevich, *Social Learning and Deviant Behavior: A Specific Test of a General Theory*, 44 AM. SOC. REV. 636 (1979) [hereinafter cited as Akers]; Kandel, *Similarity in Real-Life Adolescent Friendship Pairs*, 36 J. PER. & SOC. PSYCHOLOGY 306 (1978); Kandel, *Homophily, Selection, and Socialization in Adolescent Friendships*, 84 AM. J. SOC. 427 (1978); Kandel, *Interpersonal Influences on Adolescent Illegal Drug Use*, in DRUG USE: EPIDEMIO-LOGICAL AND SOCIOLOGICAL APPROACHES (E. Josephson & E. Carroll eds. 1974) [hereinafter cited as Kandel, *Interpersonal Influences*]; Kandel, *Adolescent Marijuana Use: Role of Parent and Peer*, 181 SCIENCE 1067 (1973); Wister & Avison, *"Friendly Persuasion:" A Social Network Analysis of Sex Differences in Marijuana Use*, 17 INT'L J. ADDICTIONS 523 (1982).

[5] *See* R. AKERS, DEVIANT BEHAVIOR: A SOCIAL LEARNING APPROACH (2d ed. 1977); E. SUTHERLAND & D. CRESSEY, *supra* note 2; Akers, *supra* note 4; Jessor, Jessor & Finney, *A Social Psychology of Marijuana Use: Longitudinal Studies of High School and College Youth*, 26 J. PER. & SOC. PSYCHOLOGY 1 (1973).

[6] Kandel, *Interpersonal Influences*, *supra* note 4, at 208.

[7] *See* NATIONAL INSTITUTE ON DRUG ABUSE, HIGHLIGHTS FROM STUDENT DRUG USE IN AMERICA 1975-1981 (1982); O. RAY, DRUGS, SOCIETY, AND HUMAN BEHAVIOR (3d ed. 1983); UNITED STATES COMMISSION ON MARIJUANA AND DRUG ABUSE, MARIJUANA: A SIGNAL OF MISUNDERSTANDING (1972).

The study analyzed zero-order correlations, regressing differential association against various types of drug use (alcohol, marijuana, and tobacco). In addition, we analyzed differential association and the two composite drug categories (UserE and UserP). An additional section analyzed the various demographic categories (sex, age, and race) to see if either specific or composite drug use is associated with the differential association variable. Finally, a sixth-order partial correlation of differential association with the drug types was conducted controlling for six demographic variables.

The criteria used in determining whether support for the theory exists will be the traditional statistical criteria of explained variance. Such a technique focuses on the "explanatory power" of the presumed independent variable as a function of the percent of variance shared between variables. Costner refers to this use of measures of association as proportionate reduction in error;[8] that is, the amount of variation within one variable which can be "predicted" from a knowledge of another variable. This mode of determining explanatory power is dependent on two factors. First, the relationship between the two variables must not be due to change error (traditionally defined at the probability level of .05). Second, any amount of explained variance must be causally meaningful (i.e., at least 10% of the total variation in the dependent variable).

II. METHOD

Self-report questionnaires were mailed to a systematic random sample of 2,000 individuals drawn from the population of persons holding valid driver's licenses in the state of Texas. Every *nth* name was taken to provide the size sample desired. Over ninety percent of Texas adults are part of this population.[9] The survey data examined in the present study are derived from one portion of the 1981 *Texas Crime Poll*.[10]

In implementing the mail-out self-report survey, a multi-state procedure was used to obtain the highest possible return rate. One week prior to mailing of the first set of questionnaires, each person in the sample was sent a pre-survey sensitizing post card. The purpose of this card was to alert the prospective respondents to the fact they had been randomly chosen to participate in this statewide study and that they should expect the survey package within approximately one week. It was hoped that the pre-survey post card would prepare the respondents for

---

[8] *See generally* Costner, *Criteria for Measures of Association*, 30 AM. SOC. REV. 341 (1965).

[9] R. TESKE & C. JEFFORDS, TEXAS CRIME POLL: SPRING 1979 SURVEY (1979).

[10] G. KERSCHER & R. DULL, TEXAS CRIME POLL: 1981 (1981). This study was conducted by the Survey Research Program at Sam Houston State University.

the survey instrument and reduce the initial rejection rate due to confusing the survey with "junk mail."

One week after the sensitizing post card was sent, the first set of questionnaires was mailed. Each person in the sample received a survey package consisting of a self-administered questionnaire, a personalized letter explaining the purpose of the poll, a pre-sharpened pencil, and a stamped, addressed return envelope. Two weeks after mailing the questionnaire those who did not respond were sent a follow-up post card asking them to complete and return the questionnaire. The post card reminded the respondents of the survey's importance and asked that they take the time necessary to fill it out.

At the end of four weeks a second survey package was forwarded to those respondents who had still not returned the questionnaire. As with the first mailing, this package contained a personally addressed cover letter, survey instrument, a pencil, and self-addressed envelope. The address label and the survey instrument had been numbered so that those returning surveys could be removed from the future follow-up process.

Finally, one week after the second survey package had been sent, a second and final reminder post card was sent to those respondents who had failed to return the survey instrument. This post card, again, reminded the respondent of the survey's importance and asked if they would return the instrument at their earliest convenience.

Prior to the first mailing, all Spanish-surname individuals in the sample were identified. A Spanish-language version of the questionnaire, along with an explanatory letter in Spanish, were included with both the first and second mailings. This was done to facilitate responses from the large number of Spanish-speaking and -reading Mexican-Americans in Texas.

The cut-off date for returns used in the present study was approximately ten weeks after the mailing of the first questionnaire and is consistent with the cut-off dates used with similar Crime Polls.[11] Of the 2,000 Texas residents who were surveyed for this study, 1,449 completed usable questionnaires, 28 of which were in Spanish. This represents a return rate of 72.5% of the original total sample. When the 100 non-forwardables and deceaseds were subtracted from the total sample of 2,000, the actual sample of potential respondents dropped to 1,899. The adjusted return rate, then, was 76.3%.

---

[11] *See* R. MARSHALL, F. WILLIAMS, & R. DULL, ALCOHOL & MARIJUANA USE IN TEXAS (1981); R. TESKE, F. WILLIAMS & R. DULL, TEXAS CRIME POLL: SPRING 1980 SURVEY (1980); R. TESKE & C. JEFFORDS, *supra* note 9, at 4.

A. INDEPENDENT AND DEPENDENT VARIABLES

The independent variable scale was based on the cumulative number of close friends who had used certain drugs. The respondents were asked the following three questions:

(1) Of your four closest friends, how many would you say use alcohol?;
(2) Of your four closest friends, how many would you say have tried marijuana?; and
(3) Of your four closest friends, how many would you say smoke tobacco?

A value of zero to four could be scored for each of the three questions and a respondent could receive a total score ranging from zero (none of his four closest friends had used any of the three drugs) to twelve (his four closest friends used all three of the drugs).

There were five dependent variables utilized in this study. The drug use dependent variables were alcohol, tobacco,[12] and marijuana use. In addition, two composite drug use categories were used: total number of drugs tried in a lifetime (UserE) and total number of drugs used during the last year (UserP).[13]

B. DATA ANALYSIS

Each of the independent and dependent variables under analysis were either interval, dummy, or high ordinal levels of measurement. We determined that for all statistical comparisons, interval level statistics would be used. The method of analysis involved a bivariate cross comparison correlation of the independent variable (differential association) with our five dependent variables (specific drug use types and composite drug categories). Pearson's Product-Moment Correlation Coefficient was the statistic used for these bivariate correlations. In addition, partial correlations were analyzed, controlling for each of the following demographic variables: age, race, sex, education, income, and marital status. The relationship between the independent and dependent variables were further examined by calculating the correlation and level of significance within selected categories of the control variables. A corresponding test of significance, utilizing the T test, was conducted for each of the bivariate comparisons.

---

[12] The tobacco variable was created by including the responses to questions regarding cigarettes, cigars, and pipes. If a respondent stated that he or she had smoked any of these tobacco products, he or she was coded as a tobacco user. Failure to use any of these items resulted in the coding of the respondent as a non-tobacco user.

[13] One needs to be aware that the composite drug-use categories of UserE and UserP are not measures of "total" drugs tried in a lifetime or during the last year. Instead of measuring all types of drugs, these composite categories examine only the use of the drugs alcohol, tobacco, marijuana, amphetamines, and barbiturates.

C.   UNELABORATED RELATIONSHIPS

The results reported in Table 1 offer powerful support for a differential association theory of drug use for adults. The differential association variable was significantly and positively associated with greater drug use. Each of the specific drug types was positively correlated with friends' use. Thus, the greater the number of close friends who use drugs the more likely an adult will be also to use drugs.

It is not surprising that marijuana, an illegal drug, was the most strongly correlated with the differential association variable ($r = .53$; $r^2 = .281$). One might expect that close intimate associations would be necessary to learn the technique of marijuana use and to maintain a supply of the drug.[14] Alcohol ($r = .45$; $r^2 = .203$) and tobacco ($r = .38$; $r^2 = .144$), however, were almost as powerfully associated with differential association as marijuana. This suggests that friends' use is as useful in predicting noncriminal drug behavior as criminal drug behavior.

TABLE 1
ZERO-ORDER CORRELATIONS OF DIFFERENTIAL ASSOCIATION WITH DRUG TYPES

Drug Types (Dependent Variables)	Frequency N	r	r^2	P
Alcohol	1397	.45	.203	.000
Marijuana	1400	.53	.281	.000
Tobacco	1398	.38	.144	.000
UserE	1401	.52	.270	.000
UserP	1398	.55	.303	.000

The results of the zero-order correlations between differential association and the two composite drug categories are shown in Table 1. The relationship between increases in an individual's total number of drugs used (UserE and UserP) suggests that the differential association theory is even more valuable in explaining composite drug use than in explaining specific drug use.

The independent differential association variable in the study was strongly correlated with both the number of drugs used in a lifetime (UserE, $r = .52$; $r^2 = .270$) and the number of drugs used in the past year (UserP, $r = .55$; $r^2 = .303$).[15] The fact that even stronger correlations

---

[14] H. BECKER, OUTSIDERS: STUDIES IN THE SOCIOLOGY OF DEVIANCE (1963).

[15] In the field of social science research it is rare to find a single non-demographic independent variable that is capable of explaining 30% of the variance within a dependent behavior variable.

were discovered for composite drug use indicates the value of differential association theory as a general explanation for drug use in an adult population.

An acceptable theory on drug use should be able to explain both licit and illicit drug use. For each type of drug use, differential association theory could predict a large variation. In addition, differential association could predict composite drug user types.

D. DEMOGRAPHIC CATEGORY EFFECTS

The study analyzed the effect of particular demographic categories. These within-group associations are important because they provide insights into the strengths and weaknesses of differential association theory within an adult population. Because of the extreme number of within-group significant correlations for differential association and drug types, the analysis was limited to correlations (r) of .50 and greater. This will provide us with comparisons that are capable of predicting twenty-five percent of the drug use variance.

A major difficulty in forecasting within-group comparisons was the fact that demographic breakdowns of the respondents' friends were not available. Although there is a wide range of literature concerning the type and amount of drug use for specific demographic characteristics, this knowledge does little to ensure that the demographic characteristics of the respondents and their friends were the same. To predict likely drug use with any degree of confidence, some evidence concerning the drug use of the friends is necessary. Since this is unavailable, we conducted an *a posteriori* analysis in which the implications and values of our specific within-group findings were explored. In the few within-group areas in which there was strong evidence that the friends' demographic characteristics were similar to the respondents' characteristics, the expected results were presented prior to the analysis of the data.

1. Gender

The social network model presented by Wister and Avison focuses on males as "agents of contagion" who spread drug use to others.[16] Their study of college students found that social networks were primarily composed of individuals of the same sex and that male networks generally displayed an environment that encouraged drug use.[17] In addition, the study showed that the more males in one's social network, the greater the likelihood of drug use.[18]

---

16 Wister & Avison, *supra* note 4, at 526.
17 *Id.* at 538.
18 *Id.*

To evaluate the impact of differential association theory on "adult" drug use for gender, it became necessary to answer the following question: Do social networks have differential impact upon male and female drug use? If the influence of social networks varies between the sexes, we would expect to find significantly higher correlations for one of the sexes. Except for a slight difference between males' ($r = .56$; $r^2 = .314$) and females' ($r = .50$; $r^2 = .250$) marijuana use, however, the remaining within-sex category correlations are nearly identical (see Table 2).

If Wister and Avison's social network analysis of sex differences applies to an adult population, we would expect a higher correlation between males' closest friends use of drugs, and the individual's use of drugs. The overall findings of this study, however, suggest that the impact of friends' use on adults use of drugs does not vary significantly between males and females.

TABLE 2
ZERO-ORDER CORRELATIONS
DIFFERENTIAL ASSOCIATION WITH DRUG TYPES WITHIN SEX CATEGORIES
(SIGNIFICANT CORRELATION VALUES OF .50 AND GREATER)

Drug Types	Sex	Frequency N	r	r^2	P
Marijuana	Male	751	.56	.314	.000
Marijuana	Female	647	.50	.250	.000
UserE	Male	752	.52	.270	.000
UserE	Female	647	.51	.260	.000
UserP	Male	750	.55	.303	.000
UserP	Female	646	.55	.303	.000

2. Age

The 1979 National Survey on Drug Abuse[19] concluded that young adults, ages 18 to 25, had the highest percentage of alcohol, tobacco, and marijuana use. Our study's youngest age category included individuals between the ages of 17 and 25. We should then be able to compare our youngest age group to the National Survey's young adult group. If, as with the gender categories, one can assume that the majority of an individual's close friends are of the same category, a higher correlation for the young adults' social networks/drug use comparisons could be

---

[19] P. FISHBURN, H. ABELSON, & I. CISIN, NATIONAL SURVEY ON DRUG ABUSE: MAIN FINDINGS, 1979 (1980) [hereinafter cited as P. FISHBURN].

TABLE 3
ZERO-ORDER CORRELATIONS
DIFFERENTIAL ASSOCIATION WITH DRUG TYPES WITHIN AGE CATEGORIES
(SIGNIFICANT CORRELATION VALUES OF .50 AND GREATER)

Drug Types	Age	Frequency N	r	r^2	P
Alcohol	Less 26	289	.50	.250	.000
Marijuana	Less 26	289	.57	.325	.000
Marijuana	31-40	307	.57	.325	.000
UserE	Less 26	289	.62	.384	.000
UserP	Less 26	290	.61	.372	.000
UserP	31-40	307	.52	.270	.000
UserP	41-50	225	.52	.270	.000

predicted. Table 3 is supportive of the suggested relationship. Respondents who were less than 26 years-of-age showed moderately strong correlations between friends' use of drugs and their use of alcohol ($r = .50$; $r^2 = .250$), marijuana ($r = .47$; $r^2 = .325$), UserE ($r = .62$; $r^2 = .384$), and UserP ($r = .61$; $r^2 = .372$). No other age category consistently showed correlation levels of this magnitude. For other than the youngest adults, the influence of friends' use on adult drug and drinking behavior shows little within-age category variation.

3. Race

The strong correlations for the within-race categories indicate that race affects the differential association variable (see Table 4). While the "other"[20] racial category comprises only a small proportion of the total respondents, it showed comparatively high correlations between friends' use and the use of alcohol ($r = .54$; $r^2 = .291$), marijuana ($r = .64$; $r^2 = .410$), tobacco ($r = .50$; $r^2 = .250$), UserE ($r = .72$; $r^2 = .518$); and UserP ($r = .73$; $r^2 = .533$).

For those respondents who fell into the "other" racial category it was possible to predict over fifty percent of the explained variation for both their past and present composite use of drugs, with knowledge of the differential association variable. Thus, for Asian Americans and other less-common minorities (within the state of Texas), drug use habits seemed to be strongly influenced by their closest friends' drug behav-

---

[20] The "other" racial category represents those respondents who were neither black, white, nor Mexican-American. This group primarily includes Asian-Americans and a few American-Indians.

TABLE 4

ZERO-ORDER CORRELATIONS
DIFFERENTIAL ASSOCIATION WITH DRUG TYPES WITHIN RACE
CATEGORIES
(SIGNIFICANT CORRELATIONS VALUES OF .50 AND GREATER)

Drug Types	Race	Frequency N	r	r^2	P
Alcohol	Black	92	.53	.281	.001
Alcohol	Other[a]	18	.54	.291	.025
Marijuana	White	1095	.56	.314	.000
Marijuana	Other	18	.64	.410	.025
Tobacco	Other	18	.50	.250	.01
UserE	White	1096	.54	.292	.000
UserE	Other	18	.72	.518	.005
UserP	White	1093	.57	.325	.000
UserP	Black	93	.53	.281	.001
UserP	Other	18	.73	.533	.005

[a] "Other" represents those respondents who were neither black, white nor Mexican-American. This group primarily included Orientals and a few American-Indians.

ior. This finding is in consonance with the general literature on deviance within Oriental groups in the United States.

On the other hand, the dominant minorities (blacks and Mexican-Americans) were less influenced by their social networks than any other racial category, including whites. The use of alcohol by blacks was correlated with the differential association variable ($r = .53$; $r^2 = .281$). There were, however, no significant relationships between blacks' own use of tobacco and friends' use. The correlation between blacks' use of marijuana and the social network factor was lower than any other racial group. Mexican-Americans showed lower than average correlations between drug types and differential association. This suggests that blacks, and to a smaller degree, Mexican-Americans, are not as strongly influenced by their friends' drug usage as are white and Asian-Americans.

This finding contradicts subculture theorists who suggest that high rates of delinquency among blacks and Mexican-Americans result from the readiness of individuals within the subcultures to adopt the values and behavior patterns of their peers. Our evidence suggests that, in reality, these adult minorities may be the least likely to adopt the behavior patterns of their peers. Further, in contrast to our other findings, these results suggest that theories of general application to juveniles may have to be modified when applied to an adult population.

That differential association remains important in the adult population, however, is shown in Table 5. Table 5 presents a sixth-order partial correlation of the reference group with the five dependent variables, controlling for sex, race, education, income, age, and marital status. After partialling out the effect of the control variables, all drug type correlations remained strongly significant and similar to the original zero-order correlations.

Although our findings provide support for the differential association theory in explaining both specific and composite adult drug use, it is still necessary to partial out the effect of other "competing" variables before we can be confident that differential association is responsible for the correlations. The partial "r" values were not significantly lower than our zero-order correlation values. Even under this more stringent evaluation, differential association theory provided a "powerful theoretical explanation" for both specific and composite drug use within an adult population.

TABLE 5
6-ORDER PARTIAL CORRELATIONS
DIFFERENTIAL ASSOCIATION WITH DRUG TYPES
CONTROLLING FOR: SEX, RACE, SCHOOL, INCOME, AGE, & MARITAL STATUS

Drug Types (Dependent Variables)	Frequency N	r	r^2	P
Alcohol	1397	.40	.160	.000
Marijuana	1400	.45	.203	.000
Tobacco	1398	.36	.130	.000
UserE	1401	.46	.212	.000
UserP	1398	.49	.240	.000

III. CONCLUSION

In conclusion, this study supports the application of the differential association theory to the adult population. Earlier studies have strongly supported the influence of friends' use on drug and drinking behavior among adolescents. We now have reason to believe that this variable is equally important in understanding adult drug behavior. In addition, this study suggests that there may be significant within social category variation between adolescent and adult populations.

In analyzing results, however, one must be cautious. Therefore, some discussion of the possible limitations of this study should be advanced. While a general adult sample was used in this study, it was a sample taken exclusively from Texas. There is evidence to suggest that

drug behavior in Texas may be dissimilar to the drug behavior in other areas of the country.[21] It is possible that the factors behind the drug use are also regionally affected.

We used close friends in this study because we assumed that frequency of association was less important than the intensity of association. If the reverse is true, then, the conclusions of this study must be called into question. In addition, our results could be interpreted to suggest merely that the greater one's use of drugs, the more likely one is to rationalize his or her drug behavior by indicating that "a lot of my friends use drugs." Thus, asking respondents to report the behavior of others raises the specter of unreliable data.

Our method of measuring use and nonuse of drugs is only one of a number of possible approaches to test the differential association hypothesis as applied to adults, and may be refined by including the amount and frequency of use. There is a great need for follow-up and additional research in the empirical examination of theories on drug use. It is recommended that future studies use a national sample and attempt further refinement of the theoretical concepts, as well as a more sensitive construction of the drug use variables. In addition, other drugs should be examined to see if differential association theory is applicable for the entire spectrum of drug use.

---

[21] *See* P. FISHBURN, *supra* note 19.