

# THE **COMMUNICATIVE** PROCESS OF DRUG RESISTANCE AMONG HIGH SCHOOL STUDENTS

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## ABSTRACT

This article reports the results of the second of two studies designed to examine social **influences** on adolescents' responses to drug offers. In the **first** study, a typology of both drug offers and drug resistance strategies was developed. The present study provides an analysis of the associations between offers and resistance and the differences between drug and alcohol offers. To accomplish this, **sixty-nine** narrative accounts of both successful and unsuccessful attempts to say no were collected from high school students. Analysis of the interviews indicated that peer pressure was applied in approximately **70%** of the offers; however, much of that pressure was applied **after** the initial offer had been refused. It also was determined that simple offers were more likely with alcohol, while drug offers were more likely to be persuasive and involve pressure during the initial offer.

Studies of high school and college students' drug use indicate that since 1980 there has been a slight decline or leveling off (Johnston, O'Malley, & Bachman, 1989). However, the proportion of students who do engage in the use of illicit substances remains high. Nine out of ten high school seniors report having used alcohol, and nearly two-thirds of all American teenagers have used controlled substances at least once before they finish high school (Johnston et al., 1989; National School Safety Center, 1986). Of greater concern is the fact that approximately 3.5 million adolescents have problems with alcohol, ranging from poor school performance to severe family conflicts (Forney, Forney, & Ripley, 1989), and that 2.7% of high school seniors use marijuana daily (Johnston et al., 1989).

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The effects of alcohol and drug use on students can be both immediate and long term. In a study of 813 students in grades 5-12, it was found that 25% of students receiving primarily A's and B's used drugs or alcohol as compared with 100% of students receiving D's and F's (Coventry Drug and Alcohol Council, 1987). In addition, research indicates that substance use patterns developed in high school predict patterns of use in adulthood; the prevalence of illicit drug use among older age groups approximates the levels observed among high school seniors (Johnston et al., 1989).

Studies also indicate that experimentation with one psychoactive substance frequently leads to experimentation with others. There appears to be a developmental progression leading from use of some substances to others (Botvin, 1986; Hamburg, Braemer, & Jahnke, 1975; Kandel, 1978). Individuals usually begin with tobacco and alcohol and progress to marijuana and possibly on to depressants and stimulants. Thus, inhibiting initiation into the use of "gateway" substances may lead to less involvement in more illicit substances.

Recent reviews of drug prevention programs (Botvin, 1985; Flay, 1985; Tobler, 1986, 1989) suggest that the most effective are those which focus on the psychosocial factors promoting initiation of substance use (Botvin, 1986). These are typically referred to as social skills training programs, the aim of which is to inoculate students against the pressure to use drugs by teaching them refusal skills. The social skills approach involves: (1) making students aware of potential social influences, (2) teaching specific skills such as how to say no, and (3) correcting misperceptions of social norms (Botvin, 1986). This approach assumes that students' resistance to social pressure is improved by making them aware of the influences upon them and by providing them with the opportunity to develop skills for resisting those influences.

The ability to say no both "gracefully and convincingly" has been shown to be a vital aspect of drug abuse and smoking prevention programs (Biglan et al., 1984; Gilchrist, Snow, Lodish, & Schinke, 1985; Kidder, Boell & Moyer, 1983). However, effective refusal strategies entail more than simply saying no. Numerous studies show that assertive refusers are perceived as offensive and unlikable (Kern, 1982; Wildman, 1986; Woolfolk & Dever, 1979). Unfortunately, as Kline and Floyd (1990) and Alberts, Miller-Rassulo, and Hecht (1991) point out, there have been few attempts to analyze the specific verbal strategies associated with effective refusal messages. Rather, in many cases, researchers and practitioners have made assumptions as to which resistance skills are effective, with little empirical basis. Several studies conducted recently (Alberts et al., 1991; Hecht, Alberts, & Miller-Ras-

sulo, 1990; Reardon, Sussman, & Flay, 1989) have attempted to redress this.

In a study of tobacco offers, Reardon et al. (1989) ascertained that college students use five strategies for resisting or saying no: simple rejection, statement of typical behavior, expression of attitude/belief, rejection of the person, and walking away. Reardon et al. suggest that these categories can be viewed as an extension of a general model of social influence in which strategies are grouped according to appeals to *appropriateness* (I don't think it's right for people to smoke), *consistency* (I don't smoke), and *effectiveness* (smoking is bad for your health). Further, data indicate that respondents' strategy use varied according to their relationship to the offerer, the situation, and the respondents' own risk status.

In a study of high school students' use of alcohol and other drugs, Alberts, Miller-Rassulo, and Hecht (1991) reported similar resistance strategies: simple no, no with an explanation, leaving, and deception. In addition, this study identified six types of offers and five reasons for refusing. Analyses suggested that, typically, offers of all substances were made by friends at home or in a social situation, and that both implicit and explicit (direct) peer pressure existed. Finally, their findings indicated that successful resistance was characterized by planning, and that use often occurred while teens were "killing time." This study, however, must be viewed as preliminary because it was conducted on a limited sample and because important factors related to drug behavior, such as demographic variables and risk state, were not examined.

The weaknesses of the original Alberts, Miller-Rassulo, and Hecht (1991) study prompted us to repeat the study using a larger sample and including analyses of risk factors. Risk state was included because numerous risk factors have been identified as antecedent to adolescent drug use (Bry, 1983; Newcomb, Maddahian, & Bentler, 1986; Kumpfer & Turner, in press) and because Reardon et al. (1989) established that choice of resistance strategy was influenced by risk state. Thus, adolescents at higher risk might be using less effective refusal skills.

Single risk factors, such as ethnicity or parental substance use, alone do not constitute an etiology for drug use. However, the more risk factors in a youth's personal, social, and emotional environment, the higher the probability of becoming a drug user. There appears to be a linear relationship between number of risk factors and higher levels of substance use (Bry, 1983; Newcomb et al., 1986).

Thus far, the list of factors identified as associated with risk state for adolescents include: ethnicity; gender; current drug, alcohol, and tobacco use; latchkey status; resistance skills; history of drug and alco-

hol use; parents' income; perceived parental use of drugs and alcohol; and perceived history of parents' drug and alcohol use. While each of these variables is associated with probability of **drug** use, some have been found to have stronger effects than others.

Studies of ethnic differences in alcohol and drug use suggest that ethnicity plays a significant role. Native American youths have a higher rate of drug use than do their peers, and Native Americans suffer from alcoholism at two to three times the national rate (Beauvais, Oetting, & Edwards, 1985; Yates, 1987). Although Anglos have the next highest incidence of drug and alcohol use (Brannock, Schandler & Oncley, 1990), the use of drugs among Anglos and **African-Americans** has decreased somewhat, while overall drug use among Hispanics has increased recently (Johnston et al., 1989).

Research also **indicates** that other variables influence drug and alcohol use. It has been established that gender influences both age of initiation and degree of drug use, with males being more vulnerable to early and greater levels of use than females (Brannock et al., 1990; Forney et al., 1989). Richardson (1989) found that self-care children, often referred to as latchkey kids, are at greater risk for drug use than are their counterparts who have **after-school** supervision. Further, early initiation into drug use is a predictor of later, higher levels of abuse (Newcomb et al., 1986). Youth who report early initiation into alcohol or drug use are more apt to continue or resume use than are those who are introduced to it later (Forney, 1989). Despite the influence of these demographic variables on drug and alcohol use, it has been determined that those who possess effective resistance skills are less vulnerable to drug use (**Kumpfer & Turner**, in press).

**Family** and peer factors have also been found to be relevant in predicting risk (Jessor & Jessor, 1975, 1977; McLaughlin et al., 1985). Specifically, parental history of drug use and current drug use increase the risk of adolescents (Baumrind, 1987, 1990; Cutter & Fisher, 1980). McLaughlin et al. (1985) determined that parental alcohol use was the best predictor of adolescent alcohol use and that parental socioeconomic status seems to have a curvilinear effect on adolescent drug use. That is, those in the lower socioeconomic strata and those who are unemployed have families who are at greater risk (Johnston et al., 1989), while Kaplan (1979) found that adolescents of upper income families were more likely to become alcohol abusers.

Because of the importance of risk factors to adolescent drug use and the likelihood that at-risk students may lack or possess different resistance skills from low-risk students, the current study was conducted. In this study, we hoped to validate, refine, and possibly extend the typology of drug resistance strategies which were developed in the

earlier Alberts, Miller-Rassulo, and Hecht (1991) report, as well as determine how high- and low-risk adolescents responded to drug and alcohol offers.

#### METHOD

##### *Respondents*

Respondents were 69 high school students from a lower-middle-class high school in a metropolitan area in the southwestern United States. Thirty-five percent of the subjects were male and 65% female. Anglos comprised 74% of the population, Hispanics 12%, African-Americans and Asians each represented 6%, and "other" accounted for 2%. The age range of the students was 11 to 17; 6% were between the ages of 11 and 13, 29% were 14 or 15, and 65% were 16 or 17. Median income of their families was between \$30 and \$40 thousand, while the mode was between \$20 and \$30 thousand. Thirty-three percent of the families represented had an income under \$20 thousand, while 20% had an income over \$40 thousand.

##### *Procedure*

Respondents were interviewed by four trained interviewers, three graduate students and a therapist who specializes in treating adolescents. Training consisted of discussion of interviewing techniques, interview questions, and procedures, as well as repeated practice and feedback sessions. The interviews were based on five open-ended, non-directive questions. (The first question was used to acquaint the subjects with the procedures and to make them more comfortable.) The five questions were: (1) Would you tell me about a time when someone tried to persuade you to do something you did not want to do? (2) Would you tell me about a time when someone offered you alcohol and you turned that offer down? (3) Could you tell me about a time when someone offered you alcohol and you wanted to turn it down but didn't? (4) Could you tell me about a time when someone offered you drugs and you turned that offer down? (5) Could you tell me about a time when someone offered you drugs and you wanted to turn that offer down but didn't? The opposing questions were asked in order to collect information about both successful and unsuccessful resistance strategies.

A series of follow-up questions were also used to probe the subjects' responses and to obtain additional information in an effort to understand the entire drug offer experience, such as participants, location, and phrasing of the offer and response. In order to elicit this information, specific questions were designed and used when necessary.

To improve the validity of the interviews, we assured respondents of confidentiality, carefully established rapport, asked respondents to focus on recent events, and framed the questions in a general fashion (Nurco, 1987). All interviews were tape recorded and transcribed. The transcriptions ranged from 15 to 30 pages.

Open-ended questions were used to elicit stories from the respondents in order to examine adolescents' subjective experience as portrayed in their own "experience-near" concepts (Geertz, 1973; Hecht, Ribeau, & Alberts, 1989; Hecht, Ribeau, & Sedano, 1990). As Rawlins and Holl (1987) note, this type of discourse is an important resource young people use both to reflect and constitute their social world. The value of this approach is that it allows an account to be developed which captures more of the adolescent's view than that of the adult culture (Geertz, 1973; Rawlins & Holl, 1987).

#### Analysis

The data were content analyzed using a category system developed in an earlier study (Alberts et al., 1991). Preliminary to the analysis, one of the investigators read through the transcripts and noted such factors as vocal tone and stress in the meaning of the utterances. Then, the narrative for each successful and unsuccessful resistance attempt was read by an investigator and the elements sorted into the established categories: (1) who made the drug/alcohol offer, (2) what was offered (alcohol or other substances), (3) where the offer was made, (4) how the offer was made, (5) how the narrator responded to the offer, (6) why the narrator made the choice (acceptance/refusal), and (7) how the offerer responded to the narrator's choice.

As a reliability check, a second investigator coded 25% of the data; the investigators reached between 88% and 100% agreement and 95% unitizing agreement. Intercoder reliabilities were calculated using a formula from Holsti (1969), and ranged from .88 to 1.00. The reliabilities and percentage agreements are presented in Table 1.

Next, a risk scale was constructed from previous research in order to measure the degree to which individuals are "at risk" for drug and alcohol use. The scale initially consisted of ethnicity (Beauvais et al., 1985; Brannock et al., 1990; Yates, 1987), gender (Brannock et al., 1990; Forney et al., 1989), early use of drugs and alcohol (Forney et al., 1989), and parents' current use and change in use (Baumrind, 1990; Cutter & Fisher, 1980; McLaughlin et al., 1985). Availability consisted of number of offers and number of refusals, with the latter weighted based on the answer to the former. Risk was calculated by converting all items into scores ranging from 1 to 3, taking their mean, and multiplying by 10 to create a range of 1 to 30. Reliability analysis resulted in

the exclusion of gender, which was then treated as a separate variable. Reliability for the remaining items was .71, and validity was supported by a .55 correlation with self-reported use. Since use was measured on a single-item scale, this correlation may be even higher when corrected for attenuation. Even assuming perfect reliability for the use scale, the correlation between risk and use was .65 when corrected for attenuation.

## RESULTS

First, the frequencies within each typology or category system were examined, and those with small frequencies were combined or eliminated in order to increase the power of the statistical analyses. Categories that exhibited small frequencies should be retained for future investigations because events that happen infrequently may be particularly meaningful or powerful. For example, the resistance strategy of leaving was rarely used in this sample. This strategy may be effective but not culturally supported at the present time. Continued drug education may develop this strategy, or a change in the culture may see an increase in the frequency of this behavior. The category systems retained for use in this study are presented in Table 1.

To answer the main research questions, a series of log linear analyses were computed to examine the interrelationships among the category-systems. First, the saturated model was tested and significant interaction terms identified using a hierarchical log linear analysis program. If there was any question about which level of interaction was appropriate (e.g., two-way vs. three-way interactions), all models at both levels of interaction were computed. Once the likelihood ratio chi-squares ( $L^2$ ) were computed for all models of the appropriate level of interaction and less, each was tested for goodness of fit and parsimony using a chi-square test to compare each model's likelihood ratio chi-square ( $L^2$ ) to that for the main-effect-only model. The lower order models were tested first. In these comparisons, the more complex model was assumed only if it provided significantly improved prediction ( $p < .05$ ). Once a model proved superior to the main effects model, it was used as the basis of comparison for all higher order interactions. In all analyses, .5 was substituted for 0 in null cells. There were no structural zeros in the analyses.

The first set of log linear analyses used data from interviews in which drugs or alcohol were resisted, and the central features of the offer were examined: type of drug (Type), type of offer (Offer), resistance strategy (Resist) and the offerer's response to the resistance (Response). Thus, the basics of the offer were examined-what was offered,

how it was offered, the resistance response, and the offerer's response to the resistance message. These were referred to as the "main variables," and tested separately due to the sample size relative to the number of contrasts and in order to provide a baseline, parsimonious model of the offer/resistance process.

The saturated hierarchical log linear analysis produced a significant likelihood ratio chi-square ( $L^2$ ) for the three-way interactions (20.59,  $df = 10$ ,  $p = .02$ ), but not for the two-way (12.93,  $df = 12$ ,  $p = .37$ ) or four-way (.49,  $df = 3$ ,  $p = .92$ ) interaction. The three-way interactions were retained for testing in a log linear analysis, with all possible 3-ways and their subsets (e.g., one 3-way and one 2-way) examined in a step-down fashion. The resulting  $L^2$  values were compared to the model which included the main effects only (see Table 2). Two of these models differed significantly from the main-effects-only model and did not differ from each other ( $L^2$  difference from main model and  $df$  for comparison listed in parentheses): Type by Offer by Resist, Offer by Response (19.76, 11); Type by Offer by Resist, Type by Response (17.74, 9). In addition, there was one model which approached a statistically

Table 1  
Reliability of Coding

	<b>Reliability</b>	Agreement
Type (alcohol, drugs)	1.00	<b>100%</b>
Offer (simple offer, pressure)	.96	92%
Resistance Strategy (simple no, <b>explain</b> no <b>desire</b> , suggest alternative behavior, other)	.88	90%
Response to <b>Resistance</b> (no problem, more pressure)	.89	93%
Who (friend/family/relative, acquaintance/coworker, stranger)	.93	95%
Where (home, social <b>situation</b> , other)	.88	<b>92%</b>

significant difference from the main-effects-only model: Type by Offer by Resist, Type by Response, Offer by Response (19.65, 12). This model was of a higher level of **complexity**, did not differ significantly from the less complex models, and was merely a combination of the two lower order models. Thus, this higher order model need not be retained. Since there were no theoretical reasons to prefer one of the two lower order models over the other and they are both of the same level of parsimony (one 3-way and one 2-way interaction), both were retained.

Both models contain the 3-way interaction among Type, Offer and

Table 2  
Frequencies for Main **Analysis**

ALCOHOL						
Offer						
<b>Resist</b>	Simple		Pressure		Totals	
No	13	72%	5	28%	18	40%
No <b>Desire</b>	11	79%	3	21%	14	31%
Alternative	9	90%	1	10%	10	22%
Other	1	33%	2	67%	3	7%
Totals	34	76%	11	24%	45	100%

DRUGS						
Offer						
<b>Resist</b>	Simple		Pressure		Totals	
No	12	75%	4	25%	16	38%
No Desire	11	55%	9	45%	20	48%
Alternative	0	0%	1	100%	1	2%
Other	3	60%	2	40%	5	12%
Totals	26	62%	16	38%	42	<b>100%</b>

(Table 2 continues)

Resist. From there the models diverge. One model adds the 2-way interaction between Type and Response, while the other adds the 2-way interaction between Offer and Response. The frequencies for these are presented in Table 2.

Examination of the frequency distributions reveals a number of patterns. The first area of interest involves social pressure. While the majority of the offers are simple, the majority of the responses involve pressure, and overall only 28% of the cases involve no pressure in either the offer or the response. Further, persuasive, pressured offers are proportionally more likely with drugs than alcohol, although follow-up or response pressure is equally likely with either substance. Not **surprisingly**, simple offers are less likely to lead to pressured responses than are pressured offers. Overall, though, pressure is more likely to result than acceptance of the refusal (statements of no problem).

Second, we can examine resistance strategies. Overall, the most likely resistance to simple offers are simply saying no and statements of no desire, although the former are even more likely as a response to pressure. In addition, simple offers of alcohol are more likely to be resisted with suggestions of alternative behaviors. When pressure is exerted in alcohol offers, other strategies (a mixed group consisting of lying, leaving, and miscellaneous) are more likely to be used.

(Table 2 **continued**)

Response	TYPE				Totals	
	Alcohol		Drugs			
No Problem	13	54%	11	46%	24	36%
Pressure	23	53%	20	47%	43	64%
<b>Totals</b>	36	54%	31	46%	67	100

Response	OFFER				Totals	
	Simple		Pressure			
No Problem	18	82%	4	18%	22	34%
Pressure	27	64%	15	<b>36%</b>	42	66%
<b>Totals</b>	45	70%	19	30%	64	100

Next, we considered the effect of the substance offered, separating alcohol from other substances (referred to as "drugs" for convenience). When drugs are simply offered, no and no desire are proportionally more likely resistance techniques than when similar offers are encountered for alcohol. Simple offers of alcohol are more likely to be resisted by suggesting an alternative. When drugs are offered with pressure statements, responses of no desire are more likely to be used to resist, while alcohol resistance to pressure is more likely to be a simple no. In general, statements of no desire and other strategies are more likely with drugs than alcohol, and suggestions of alternative behaviors are more likely with alcohol.

The secondary analyses were then conducted using the remaining variables: where the offer was made (Where), who made the offer (Who), Gender, Use, and Risk. Each variable was entered separately into the analyses with the four main variables to examine their relationships with the central features of the offer process. A hierarchical log linear analysis of the saturated model was computed and the interactions tested each time. The different versions of the resulting model were compared with a model consisting of the main effects only. In these tests, a step-down procedure was employed to break down the more complicated models into their constituent parts. For example, a model consisting of two 3-way interactions might be simplified to one 3-way and one 2-way. In order to merit inclusion in the final model, the additional variable had to exhibit at least one significant interaction with the main variables.

Among the additional variables, Who and Gender failed to produce an effect large enough to require inclusion. For these variables, the test of K-way interactions did not support examination of any model other than the main effects. As a result, these analyses will not be discussed. Only the effects relative to the significant additional variables are discussed.

The saturated analysis adding Where to the main model indicated the presence of at least one significant 3-way interaction ( $L^2 = 47.22$ ,  $df = 24$ ,  $p = .07$ ). Since computation of all possible 3-ways and their combinations was impractical due to the number of comparisons and breakdowns, and the limitations on interpretability, it was decided to examine all possible combinations of three, two, and one 3-ways. When all of these  $L^2$  values were computed and compared to the main-effects-only model, a model consisting of the 3-way interactions among Where, Type, and Response and among Type, Offer, and Resist was significantly better than the main-effects-only model ( $L^2$  difference = 30.91,  $df = 17$ ,  $p = .05$ ). The latter 3-way was part of the main analysis model and is not discussed further. The other term adds Where to the 2-way in one of the two main analysis models. This term will be exam-

ined more closely. In addition, two other models approached statistical significance ( $p < .10$ ). With the difference between their  $L^2$  value and that for the main effects in parentheses, along with the df for the test, they are: Where by Offer by Response, **Type** by Offer by Resist (24.58, 17); Where by **Type** by Response, Where by Offer by Resist (33.13, 24).

Table 3  
Frequencies for WHERE Analysis

**HOME**

Response

Type	No Problem		Pressure		Totals	
Alcohol	2	<b>29%</b>	5	<b>71%</b>	7	<b>44%</b>
Drugs	5	56%	4	<b>44%</b>	9	<b>56%</b>
Totals	7	<b>44%</b>	9	56%	16	<b>100%</b>

**SOCIAL SITUATION**

Response

Type	No Problem		Pressure		Totals	
Alcohol	9	<b>33%</b>	18	<b>67%</b>	27	60%
Drugs	6	33%	12	67%	18	40%
Totals	15	33%	30	67%	45	100%

**OTHER**

Response

Type	No Problem		Pressure		Totals	
Alcohol.	2	100%	0	0%	2	33%
<b>Drugs</b>	0	0%	4	100%	4	<b>67%</b>
Totals	2	33%	4	67%	6	100%

(Table 3 continues)

The additional term, Where by Offer by Response, is examined below.

Examination of the frequency distribution of the three-way interactions must be interpreted cautiously due to very low Ns, particularly for other settings (see Table 3). These analyses suggest that overall there is likely to be proportionally less pressure at home than other locations, but that when there is pressure it is likely to be in response to a refusal of alcohol. In addition, when **compared** to other settings,

(Table 3 continued)

HOME						
Response						
Offer	No Problem		Pressure		Totals	
Simple	4	<b>44%</b>	5	<b>56%</b>	9	64%
Pressure	2	40%	3	<b>60%</b>	5	36%
Totals	6	43%		<b>57%</b>	14	100%

SOCIAL SITUATION						
Response						
Offer	No Problem		Pressure		Totals	
Simple	8	31%	18	69%	26	<b>70%</b>
Pressure	1	<b>9%</b>	10	91%	11	30%
Totals	9	24%	28	76%	37	<b>100%</b>

OTHER						
Response						
Offer	No Problem		Pressure		Totals	
Simple	1	33%	2	<b>67%</b>	3	<b>50%</b>
Pressure	1	33%	2	<b>67%</b>	3	<b>50%</b>
Totals	2	33%	4	67%	6	100%

(Table 3 continues)

simple offers made at home tend to lead to no continued pressure, and pressure is more likely to be resisted by a statement of no desire. In social situations, pressure is equally likely for drugs and alcohol, and pressure is more likely to lead to continued pressure than in other settings. Further, in social situations, when simple offers are resisted,

(Table 3 continued)

HOME										
Resist										
Offer	No		No Desire		Alternative		Other		Totals	
Simple	7	<b>64%</b>	3	<b>27%</b>	1	<b>9%</b>	0	0%	11	<b>69%</b>
Pressure	1	20%	4	80%	0	0%	0	0%	5	<b>31%</b>
Totals	9	50%	7	44%	1	6%	0	0%	16	100%

SOCIAL SITUATION										
Resist										
Offer	No		No Desire		Alternative		Other		Totals	
Simple	11	31%	17	47%	7	19%	1	3%	36	67%
Pressure	7	39%	5	28%	2	11%	4	22%	18	33%
Totals	18	33%	22	41%	9	17%	5	9%	54	100%

Resist										
Offer	No		No Desire		Alternative		Other		Totals	
Simple	3	60%	0	0%	1	20%	1	<b>20%</b>	5	55%
Pressure	1	25%	3	70%	0	0%	0	0%	4	44%
Totals*	4	44%	3	33%	1	11%	1	<b>11%</b>	9	99%

\*Note: Does not add up to 100% due to rounding.

the most likely strategy is a statement of no desire followed by a simple no and suggestions of alternative behavior, while no is more likely than no desire when pressure is encountered in these settings. Overall, a greater number of resistance strategies are likely to be utilized in social situations.

The test of the saturated model in which Use was added to the main variables indicated the possible presence of at least one 2-way interaction ( $L^2 = 28.22$ ,  $df = 18$ ,  $p = .06$ ), but did not support examining the 3-way ( $19.72$ ,  $df = 22$ ,  $p = .63$ ) or higher interactions. As before, models involving three 2-ways or less were examined. Only one model, that consisting of Use by Response, Type by Offer, and Type by Resist differed significantly from the main effects model ( $L^2 = 11.82$ ,  $df = 5$ ,  $p < .05$ ). However, five additional models exhibited  $L^2$  values that approached statistical significance ( $p < .10$ ). These (with  $L^2$  difference and  $df$ ) were: Use by Type, Type by Resist, Offer by Response (9.36, 5); Use by Resist, Type by Offer, Offer by Response (9.31, 5); Use by Resist, Type by Offer, Type by Response (9.87, 5); Use by Resist, Use by Response, Offer by Resist (8.43, 6); Use by Resist, Use by Response, Type by Offer (10.26, 5). As before, only the terms involving Use are discussed.

The frequencies for the Use analysis are presented in Table 4. The cross-tabulation for the Use by Resist interaction revealed that teens who use drugs and alcohol tend to utilize a more diverse group of resistance strategies. While nonusers are likely to rely almost exclusively on statements of no or no desire, users also use alternative behavior. When Use and Type are crossed, analysis reveals that nonusers are more likely to be able to describe resistance to drugs than alcohol, while the opposite pattern is more likely for users of one or more substances. Finally, users are more likely to receive pressure to use substances after they have refused an offer.

In order to compute the risk analysis, scores were divided at the median (13.75) into high and low risk. This variable then was added to the analysis and a saturated model tested. The test of the K-way interactions again supported examining the 2-way interactions (26.12,  $df = 18$ ,  $p = .09$ ), but not the 3-way (23.31,  $df = 22$ ,  $p = .38$ ) or higher interactions. The same procedures were applied as were followed in analyzing the Use variable. Three models exhibited significant differences ( $p < .05$ ) from the main effects model. With the  $L^2$  differences (all tests had  $df = 5$ ) in parentheses, these are: Risk by Type, Type by Response, Offer by Response (12.93); Risk by Type, Type by Offer, Resist by Response (12.34); Risk by Response, Type by Offer, Type by Resist (14.17). Since these models did not differ significantly from each other, and all are the same level of complexity, each was retained. In

addition, two models approached statistical significance ( $p < .10$ ) and are examined: Risk by Offer, Type by Resist, Type by Response (10.54); Risk by Offer, Type by Resist, Offer by Response (10.38).

The frequencies for the Risk analysis are presented in Table 5. When Risk is cross-tabulated with Type, it appears that while high-risk respondents are equally likely to recall resisting drugs and alcohol, low-risk respondents are more likely to be successful in recalling alcohol resistance. The Risk by Response cross-tabulation revealed only minor differences. The Offer by Risk cross-tabulation also revealed small differences in the direction of a tendency toward more pressure in offers to high-risk respondents.

Table 4  
Frequencies for USE Analysis

<b>RESIST</b>										
<b>Offer</b>	<b>No</b>		<b>No Desire</b>		<b>Alternative</b>		<b>Other</b>		<b>Totals</b>	
Nonuser	24	40%	24	40%	6	10%	6	10%	60	75%
User	6	30%	7	35%	6	30%	1	5%	20	25%
<b>Totals</b>	<b>30</b>	<b>37%</b>	<b>31</b>	<b>39%</b>	<b>12</b>	<b>15%</b>	<b>7</b>	<b>9%</b>	<b>80</b>	<b>100%</b>

<b>TYPE</b>						
<b>Offer</b>	<b>Alcohol</b>		<b>Drugs</b>		<b>Totals</b>	
Nonuser	30	41%	44	59%	74	76%
User	19	79%	5	21%	24	24%
<b>Totals</b>	<b>49</b>	<b>50%</b>	<b>49</b>	<b>50%</b>	<b>98</b>	<b>100%</b>

<b>RESPONSE</b>						
<b>Offer</b>	<b>No Problem</b>		<b>Pressure</b>		<b>Totals</b>	
Nonuser	14	36%	25	64%	39	74%
User	3	21%	11	79%	14	26%
<b>Totals</b>	<b>17</b>	<b>32%</b>	<b>36</b>	<b>68%</b>	<b>53</b>	<b>100</b>

Finally, a log linear analysis was computed to compare situations in which *offers* were either accepted or refused. In addition to Acceptance, this analysis included **Type**, Offer, Who, and Where in order to **describe** the dynamics of the refusal process. For this analysis, all answers from all respondents were examined. This differs from all previous analyses, which included only descriptions of drug and alcohol refusals (approximately half the stories).

The test of the saturated model indicated at least one significant 2-way interaction ( $31.54, df = 19, p = .03$ ), but no 3-way ( $11.53, df = 25, p = .99$ ) or higher interactions. In the resulting analyses, four models exhibited statistically significant differences ( $p < .05$ ) from the

Table 5  
Frequencies for **RISK** Analysis

	TYPE					
	Alcohol		Drugs		Totals	
Low	31	57%	23	<b>43%</b>	54	<b>51%</b>
<b>High</b>	26	50%	26	<b>50%</b>	52	49%
<b>Totals</b>	57	54%	49	46%	106	100%

	RESPONSE					
	No Problem		Pressure		Totals	
Low	9	32%	19	<b>68%</b>	28	47%
High	10	31%	22	69%	32	53%
<b>Totals</b>	19	32%	41	68%	60	100%

	OFFER					
	Simple		Pressure		Totals	
Low	28	67%	14	33%	42	51%
High	25	63%	15	37%	40	49%
<b>Totals</b>	53	65%	29	35%	82	100%

main effects models and were not statistically distinguishable from each other. Acceptance by **Type**, **Type** by Where, Offer by Who (11.83, 5); Acceptance by Offer, Type by Where, Offer by Who (12.28,5); Acceptance by Who, Type by Offer, Type by Where (11.89, 5); Acceptance by Who, Type by Where, Offer by Who (14.89, 6). In addition, five models approached **significance** ( $p < .10$ ): Acceptance by Offer, Acceptance by Who, **Type** by Where (10.99, 5); Acceptance by Offer, Type by Who, Type by Where (10.47, 5); Acceptance by Where, **Type** by Offer, *Offer*

Table 6  
Frequencies for **ACCEPT/REJECT** Analysis

OFFER								
Accept	Simple		Pressure		Totals			
Yes	29	49%	30	51%	59	42%		
No	53	65%	29	35%	82	58%		
Totals	82	58%	59	42%	141	100%		

  

WHO								
Accept	Stranger		Acquaint./. Coworker		Friend/Family		Totals	
Yes	5	9%	10	17%	43	74%	58	41%
No	10	12%	25	30%	48	58%	83	59%
Totals	15	11%	35	25%	91	64%	141	100%

  

WHERE								
Accept	Home		Social Situation		Other		Totals	
Yes	14	24%	41	71%	3	5%	58	<b>40%</b>
No	18	21%	59	<b>69%</b>	9	10%	86	<b>60%</b>
Totals	32	22%	100	70%	12	8%	144	100

(Table 6 continues)

by Who (9.68, 5); Acceptance by Where, **Type** by Who, Offer by Who (10.87, 6); Acceptance by Where, **Type** by Where, Offer by Who (11.96, 6). These five additional models added only two terms, Acceptance by Where and **Type** by Who, to the analyses. Since the sampling frame for these analyses included both acceptances and rejections, whereas previous analyses examined only rejections, all terms were examined for patterns.

(Table 6 continued)

### WHERE

Type	Home		Social Situation		Other		Totals	
Alcohol	17	19%	66	76%	4	5%	87	60%
Drugs	15	26%	34	60%	8	14%	57	40%
Totals	32	<b>22%</b>	100	70%	12	8%	144	100%

### RESPONSE

Type	No Problem		Pressure		Totals	
Alcohol	55	63%	32	37%	87	62%
Drugs	27	50%	27	50%	54	38%
Totals	82	58%	59	42%	141	100

### WHO

Type	Stranger		Acquaint./ Coworker		Friend/ Family		Totals	
Alcohol	7	8%	17	20%	60	71%	84	60%
Drugs	8	14%	18	31%	31	54%	57	40%
Totals;	15	11%	35	25%	91	65%	141	101

**\*Note:** Does not add up to 100% due to rounding.

(Table 6 continues)

(Table 6 **continued**)

Offer	WHO						Totals	
	Stranger		Acquaint/ Coworker		Friend/ Family			
Simple	12	<b>15%</b>	22	<b>28%</b>	45	57%	79	<b>58%</b>
Pressure	3	5%	11	19%	44	<b>76%</b>	58	42%
<b>Totals</b>	15	1196	33	24%	89	65%	137	100%

The frequency cross-tabulations for this analysis are presented in Table 6. The cross-tabulation of Acceptance and Type was not meaningful, since respondents were asked to provide an example of each of the four cells in the matrix. The remaining analyses indicated that respondents are more likely to reject a simple offer and more likely to accept an offer if it involves pressure or is made by a friend or family member. In addition, alcohol is proportionally more likely to be offered in a social situation by friends or family, while drugs are relatively more likely to be offered at home or other situations by strangers, acquaintances, or coworkers. Overall, there is likely to be proportionally more pressure with drugs than alcohol, and more pressure from family and friends than from other people.

#### DISCUSSION

Folk knowledge suggests that adolescents are particularly susceptible to drug offers because of the inherent "peer pressure" involved. In fact, many of the models and programs which have arisen around the issue of adolescent drug use have included skills to resist such pressure (Tobler, 1986) or have accounted for adolescent behavior by referring to this social pressure (Jessor & Jessor, 1975). However, quite often this assumption has lacked an empirical basis. The present study, in addressing this issue, did indicate that peer pressure is an attendant part of adolescent drug offers; in fact, only 28% of the reported cases did not involve some form of pressure. Interestingly, however, much of this pressure occurred not in the original offer but in response to the recipient's refusal of the substance. Thus, most offers tended to be

simple offers with no pressure, but when "no" was the reply, the majority of the offerers' responses involved pressure.

In our original study (Alberts, Miller-Rassulo, & Hecht, 1991), we examined the degree of pressure present in the offer but failed to examine how offerers responded to refusals. The addition of the "offerer's response" variable is important because social pressure appears to exist primarily in the response, and failure to consider response causes researchers to underestimate the degree of pressure in an interaction. In addition, the kind of pressure used in the response has important implications for how adolescents are educated to refuse offers. Thus, "just say no" is likely to be ineffective because a "no" response typically will lead to additional pressure. Therefore, adolescents who wish to say no must be encouraged to develop a repertoire of strategies for continued refusal once pressure has been applied.

Another implication of this research is that alcohol and other drugs may need to be treated separately. There tended to be differences both in how drugs and alcohol were offered and the responses to those offers. For example, simple offers were likely with alcohol, while offers of drugs were more likely to be persuasive and to involve pressure in the initial offer. Further, replies of "no" and "no desire" were more likely if the offer was for drugs. These responses may be due to the fact that drugs are viewed as less socially acceptable; consequently, a simple no may be an acceptable reply. In response to alcohol offers, suggestions of alternative behavior were more likely than with drugs. This suggests that, if one is offered a beer, it may be seen as appropriate to decline if one has a "reason" (e.g., one has to study or drive home).

We also found that setting, as well as substance offered, influenced how the interaction unfolded. Pressure was less likely to be applied in someone's home, but if applied, it was in response to a refusal of alcohol. In social situations, on the other hand, pressure was equally likely for drugs or alcohol, and initial pressure was more likely to lead to continued pressure than in other settings. The tendency of social situations to increase the degree of pressure in an alcohol or drug offer is probably due to the number of people involved, the tendency for crowds to exert peer pressure on both the offerer and the recipient, and most strongly, the cultural expectation that social situations are to be enjoyed through the use of alcohol and/or drugs. Associated with this greater likelihood of pressure in social situations, it was found that a larger number of resistance strategies were likely to be used. Thus, greater pressure lead to more diverse attempts to refuse.

When demographic variables were examined, few associations were found. However, results indicated that users and nonusers differed in

their resistance behavior. For example, adolescents who were users of drugs and alcohol used more diverse strategies, while nonusers relied almost exclusively on "no" and "no desire" responses. This finding is probably due to the greater number of opportunities users have and to a related finding from this study, that users were more likely to receive pressure to use substances after they had refused the initial offer. Thus, if one has a history of use, one is more likely to receive pressure and, in turn, have more diverse ways of declining.

An unexpected finding was the relatively small impact of risk upon participants' experience of drug and alcohol offers. We did determine that high-risk adolescents were more likely to receive pressure, and that they were likely to recall resisting both drug and alcohol offers. Low-risk participants, on the other hand, were more likely to be able to recall only resistance to alcohol offers. It is not argued that high- and low-risk adolescents do not differ in their use of these substances, but that the ways in which they are offered and respond are fairly similar.

In terms of general findings, we did discover that participants were more likely to reject a simple offer and more likely to accept if the offer involved pressure or was made by a friend or family member. In addition, drug offers were more likely to involve pressure, and more pressure was likely to be exerted by family and friends.

This study suggests that future training programs need to address a variety of situational factors. Adolescents need to be made sensitive to the influence of setting and the relationship of the offerer to their response behavior. They need to be made aware of their greater vulnerability in social situations and to family and friends. Further, because of the strong influence of "follow-up" pressure after a refusal, teenagers need to be encouraged to develop diverse resistance strategies and to apply them over the course of the entire interaction.

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