

**SOCIAL PROCESSES IN ALCOHOL DEPENDENCE:  
AN ANALYSIS OF THE AUSTRALIAN INVENTORY  
OF ALCOHOL USAGE**

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“Social Processes in Alcohol Dependence” is the first in a series of Technical Reports to be published by the National Drug and Alcohol Research Centre. The series will include reports of research by Centre staff and independent collaborators on basic social, psychological and biological processes in the addictive behaviours. Technical Report signifies that researchers in the drug and alcohol field are the intended audience. However, to facilitate dissemination of research findings to the wider drug and alcohol treatment community, each report is preceded by a preface which explains in non-technical terms the questions that prompted the research, the methods used, the major findings, their implications for future research and their possible relevance to the treatment of persons with drug and alcohol dependence. On this occasion the preface is contributed by Associate Professor Wayne Hall.

Nick Heather

Director

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## PREFACE

It is widely accepted that alcohol use is influenced by peer and parents' use and attitudes towards alcohol, but the mode of the influence is unclear. Is it direct? That is, do our parents' and peers' behaviour and attitudes serve as a model for our own? Or is it indirect? That is, do our parents' and peers' behaviour and attitudes influence the norms we acquire about drinking which, in turn, influence our own alcohol use?

In this Technical Report, Keats and his colleagues have used the method of path analysis to address this issue. Path analysis tests hypotheses about the direction of causal influence between variables by examining the pattern of correlations between them when the effect of other variables has been statistically controlled for. For example, if our parents' use of alcohol indirectly affects our own use via our norms, then any correlation between our parents' use of alcohol and our use should disappear when our own norms are controlled for. If, however, our parents' use of alcohol directly affects our use, then controlling for our norms will leave the correlation between our parents' and our use of alcohol unaffected. If our parents' use of alcohol affects our use of alcohol both directly and indirectly then we can estimate the size of both effects by examining the degree to which controlling for our norms reduces the correlation between our own and our parents' use of alcohol.

Keats and his colleagues have studied the influence of parental and peer alcohol use and attitudes on adult alcohol use in both an alcohol-dependent and a community sample. In the process of carrying out this work, they have developed and validated the Australian Inventory of Alcohol Usage (AIAU). This is a specifically Australian questionnaire for assessing frequency and quantity of an individual's alcohol use, and the extent of his or her dependence on alcohol and alcohol-related problems.

The first question concerned the influence of demographic variables such as age and occupational status upon alcohol use (there were too few women in the sample to make

an analysis of the effects of sex worthwhile). The results showed predictable relationships between age and occupation in the control sample. Younger persons consumed more alcohol than older persons, and the unskilled workers consumed more than the semi-skilled and skilled.

The second question Keats and his colleagues addressed was: Do social processes influence alcohol use among adults in the same way as they do among adolescents? To answer this question, they compared the results of path analyses in a community sample of adults with those previously obtained in community samples of adolescents. The results suggested that adult alcohol use was more strongly influenced directly by parental and peer use and attitudes than was adolescent alcohol use. Adult alcohol use was equally influenced by preferences and norms whereas adolescents' alcohol use was more strongly related to their preferences than to their norms.

The third question Keats and his colleagues posed was: What role do these social processes play in alcohol dependence? This question was addressed by comparing the results of path analyses in the alcohol-dependent and control samples. The result indicated that, in alcohol-dependent subjects, parental and peer attitudes did not have an indirect effect on alcohol use via internalized values. Rather, there was a direct effect of peer use on the alcohol consumption of the alcohol-dependent sample. In the community control sample, by contrast, the effects of parental and peer use and attitudes on the person's alcohol use were indirect.

Their findings have implications for future investigations of social processes in alcohol use and dependence. They have provided a promising instrument for assessing alcohol usage and dependence which can be applied in Australian samples. The study also reveals the potential usefulness of path analytic methods in disentangling the contribution of social variables to alcohol consumption and dependency. As theoretical ideas mature, and as valid and reliable measures of social variables are developed, more sophisticated methods of exploring patterns of causal relationships between variables (such as COSAN and LISREL) can be used.

It is perhaps a little premature to derive strong practical implications from the findings of the study. As the authors note, the current findings are based upon cross-sectional data; our confidence in the relationships observed will be increased if the same sorts of relationships are borne out in the prospective studies that the authors recommend should be undertaken.

Wayne Hall

Deputy Director

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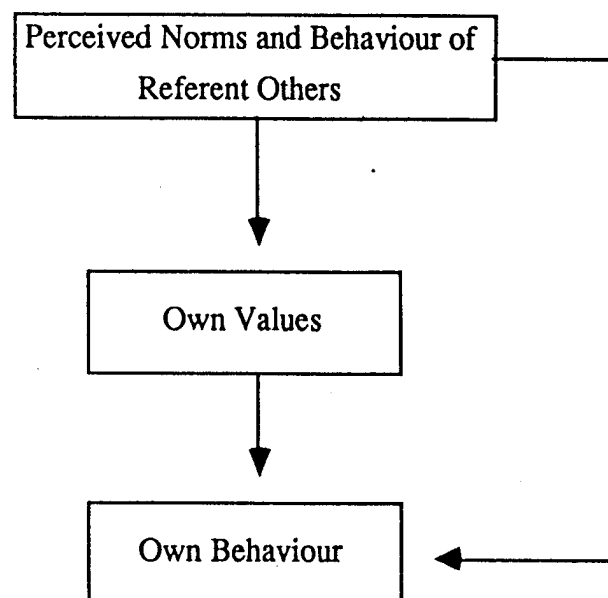
There have been few studies on the effects of social factors on alcohol use and dependence. Even relationships between alcohol use and crude demographic indicators of social factors, such as age and socio-economic status have not been thoroughly explored. As Linsky, Colby and Staus (1986) note; "the sociological theory of alcoholism developed over the last three decades has resulted in a conceptually rich legacy, but a dearth of systematic empirical research". The purpose of the present study is to contribute to this relatively neglected area of research.

The major purpose of this study was to develop and test a model of the relationships between alcohol use and internalised values, preferences and norms which influence behaviour. The term "norms" was intended to cover what the individual believes should, or should not, be done. The term "preferences" was defined as the subject's enjoyment or non-enjoyment of a behaviour.

The model used was originally developed by Biddle, Bank & Marlin (1980a, 1980b). In this model the three groups of variables shown are assumed to be "manifest" (i.e. measured without error), and hence the model can be tested by examining the relationships between the measured variables (see Figure 1).

*Figure 1*

Model showing the relationship between internalised values, preferences and norms (Biddle et al. 1980a, 1980b).



The study sought to answer the following research questions. First, what effects do demographic variables, such as age and occupational status, have on alcohol use and dependence? Second, would a sample of non-alcohol-dependent adults produce the same



pattern of alcohol use as adolescents, or would greater maturity lead to a less hedonistic approach to alcohol use? That is, would norms have a greater influence on adult behaviour than preferences? Third, what would be the differences, if any, between the path diagrams for alcohol-dependent and non-alcohol-dependent subjects?

Such a model has been tested in research on adolescents by Biddle et al. (1980a, 1980b) and Bank, Biddle, Anderson, Hauge, Keats, Marlin and Valantin (1985). For example, the data from the Australian sample of adolescents, which formed part of the international study by Bank et al. (1985) revealed two things. First, that almost all of the influences of the perceived norms and preferences of parents and peers on alcohol related behaviour are indirect, i.e. they operate on behaviour via internalised values. Second, that individual preferences are stronger predictors of alcohol-related behaviour than norms.

Similar results have been obtained in a sample of adolescents from Missouri, USA in which there were also no statistically significant direct effects of social factors on alcohol use. The results from the Norwegian and French samples in the study differed in showing statistically significant and substantial direct effects from peers in the Norwegian group, and from parents in the French group.

The findings of a study involving 507 Newcastle students, aged between 14-16 years (Webster, Hunter & Keats, 1988) have substantially confirmed both of the previous findings (Biddle et al., 1980a, 1980b; Bank et al., 1985). The influence of referent others on adolescent behaviour was predominantly via internalised values and the adolescents' preferences were more influential than their norms. Differences between the findings of the two Australian studies were small and were more likely to be due to the 10 year interval between the two samples than to differences in the sampling of subjects or in the method of administration of the scales.

## Method

### *Design*

The design of the study involved comparing a sample of alcohol-dependent adults with a sample of non-alcohol-dependent adults who had been matched on age, sex, and occupational status. This design enabled the relationship between these demographic variables and alcohol use to be studied. Previous studies (e.g. Saunders, 1986), as well as informed observation suggest: that men drink more than women; that younger adults drink more than older adults; and that adults with lower socio-economic status drink more than those with higher socio-economic status. The central research questions concern the relative strength of these relationships in the alcohol-dependent group and in the non-alcohol-dependent control group.

### *Subjects*

The subjects who completed the questionnaire consisted of 378 residents of the Hunter Region of N.S.W. Over 95% of the participants were Australian citizens, and approximately 60% had lived in this region most of their lives. A total of 366 subjects (43 females and 323 males) were included in the final analysis (12 subjects' responses were discarded due to incomplete data). The ages of both groups ranged from 16 to 60 years and the occupational status of both samples showed approximately equal numbers of unskilled and semiskilled/skilled workers.

For the final analysis, subjects in both the community control and alcohol-dependent groups were classified into 2 groups, 'young adults' (34 years and younger) and 'older adults' (35 years and older). The community control and alcohol-dependent groups were matched for occupational status as assessed by Congalton's (1962) rankings of the perceived status of occupations. The subjects were initially classified into Congalton's 4 groups (A to D) - where Group A are professional, Group B are skilled, Group C are semi-skilled and Group D are unskilled. However, due to small numbers of the skilled and professional groups the latter were combined

with the semi-skilled group. The final analysis was therefore conducted on 2 groups; (1) unskilled and (2) semiskilled/skilled workers.

There were 173 subjects who presented themselves as alcohol-dependent and were accepted for treatment as alcohol-dependent persons at the major hospitals and treatment centres in the Hunter region. An attempt was made to collect data on the alcohol-dependent group from collateral sources, but this was unsuccessful due to the subjects' unwillingness to nominate a friend to take part in the study. There were 193 community control subjects who were selected from various locations (industry, shopping centres and roadside labouring jobs) subject to the constraint that they matched the alcohol-dependent group on sex, age and occupational status.

An attempt was made to select subjects who had recently been drinking. Fifty percent of the total sample had consumed alcohol in the week prior to testing. Over 50% of the total sample reported that their last month of drinking was typical, and the number of subjects who reported increased consumption equalled the number who reported reduced consumption.

In the community control sample, recall of current drinking history was enhanced by the fact that over 85% had consumed alcohol in the week prior to testing. Over 80% reported that their last month of drinking was typical. In the alcohol-dependent sample, approximately 25% had not consumed alcohol in the month previous to the survey because they had been abstinent as part of their treatment. Nevertheless, they appeared to have good recall of their last month of drinking which they had been required to describe as part of their assessment for treatment. Seeking treatment was a turning point for many, so their memory of events immediately prior to abstinence may have been enhanced.

Half of all subjects reported drinking regularly before the age of 18 years, while 34% of the alcohol-dependent subjects were drinking regularly by the age of 15 years compared to 14% of the control sample. The age at which regular

drinking commenced was significantly correlated with dependence, (-.28) for the control group, and with quantity, (-.30) for the alcohol-dependent group.

### *Materials*

It was necessary to establish a reliable and valid measure of alcohol use and dependence. Self-reported frequency and quantity of alcohol consumption by adolescents and adults have been shown to be reliable measures of alcohol use (Webster, Hunter & Keats, 1988; Keats & Webster, 1988). However, self-report measures of dependence are of unknown reliability. It is usually assumed that alcohol dependence is best assessed by measures of physiological and withdrawal effects. Various instruments have been mentioned in the literature as ways of quantifying these variables, (e.g. Stockwell, Hodgson, Edwards, Taylor & Rankin, 1979; McLellan, Luborsky, Woody & O'Brien, 1980) but these suffer from the disadvantage that none of them have been administered to substantial Australian samples and, in most cases, they do not seem to be sufficiently comprehensive. It was decided, therefore, that a new instrument be constructed to measure the variables of alcohol use and dependence. The Australian Inventory of Alcohol Usage (AIAU) was constructed and checked using statistical analyses of data from undergraduates.

The Australian Inventory of Alcohol Usage (AIAU) Version 2 (Keats & Webster, 1988) was used to collect data on the dependent variables of frequency and quantity of alcohol use, and degree of alcohol dependence. Separate scores for frequency and quantity of drinking and dependence on drinking were obtained from this Inventory.

An interview schedule and coding protocol was devised, based on the schedule used by Bank et al. (1985) in their cross-cultural study of social influences on adolescents' use of alcohol. The questions were designed to obtain measures of the subject's perceptions of their mother's, their father's, their spouse's, and their friend's use of

alcohol, and norms about alcohol use. Subjects were also asked about their own preferences, norms, and use of alcohol.

Before interviewing subjects, permission was obtained from the management of the hospitals, clinics and industries visited. Participants were assured of confidentiality and anonymity prior to their giving written consent. Two interviewers conducted private, individual interviews using the AIAU and the interview schedule. The AIAU was read to each subject and their responses were recorded by the interviewer prior to administering the interview schedule (in some circumstances, tape recorders were not able to be used so subject responses were recorded manually). The two interviewers periodically checked each others' questioning and coding of the interviews in order to provide consistent scoring across the subject population. To avoid bias in the data collection, both interviewers collected data from all the subject sources.

## Results and Discussion

### *Demographic Variables*

There were no significant differences between the community control and alcohol-dependent groups in sex, age, occupational status and place of residence. A statistically significant difference was noted between the alcohol-dependent subjects and community control subjects on all the remaining demographic variables (see Table 1). A large difference was also observed between the alcohol-dependent and the control subjects with regards to social stability, with the former showing much less stability than the latter - as indicated by a greater number of job and residential changes, relationship breakdowns and proportion living alone.

*Table 1*

Demographic characteristics of the alcohol-dependent and control samples.

	Alcohol-dependent sample	Community control sample
Number	173	193
Median Age	37	35
% unskilled	50	42
% unemployed	48	2
% < 10 years education	40	23
% separated or divorced	51	8
% living alone	38	7
% >1 address change in past 2 yrs	60	30

### *Validity of the AIAU*

Three types of analysis were performed to test the validity of the AIAU. First, correlations between each item and the total score were calculated. Second, a factor analysis was performed on questionnaire items to explore their structure. Third, the alcohol-dependent and community control group means on each of the scale items were compared by means of a t-test.

### *Item Correlations*

With two exceptions (Items 17 and 25), all correlations between each item and the total score were positive and statistically significant ( $p < 0.01$ ). Question 17 (Section IV) 'secret drinking' was shown to be non-significant for the community control group, yet significant for the alcohol-dependent group. Question 25 (Section V) 'Drink driving', was shown to be non-significant for both the community control and alcohol-dependent groups. It is therefore suggested that in future versions of the AIAU these items be removed.

### *Factor Analysis*

A factor analysis of the AIAU was carried out on the items using the undergraduate sample of subjects. Four factors were required to account for the pattern of correlations. The rotated factors were identified as: (1) classical signs of dependence, (2) physiological consequences of alcohol use, (3) withdrawal symptoms, and (4) the social consequences of alcohol use (Keats & Webster, 1988).

Separate factor analyses were carried out on the community control and the alcohol-dependent groups. From examination of residuals and loadings, it was clear that the frequency and quantity variables were producing a poorly defined factor. With the omission of these variables from all groups, the 'classical signs' and 'physiological consequence' factors combined, resulting in a strong pattern of 3 factors in the community control and alcohol-dependent groups. The results of the analysis are

shown in Table 2.

It should be noted that the variability of responses on some of the variables for the alcohol-dependent group was much greater than for the other two groups. The greater spread of responses may have led to higher correlations and more significant factor loadings. For instance, 36 of the loadings in the alcohol-dependent group, 33 of the loadings in the community control group and 28 of the loadings in the undergraduate group were greater than 0.3. Since one of the purposes of the AIAU is to locate early signs of dependence, it is the factor pattern for the alcohol-dependent group that is the most significant.

Question 13 (Section IV) 'ability to abstain', was excluded from the factor analysis since the correlation between that item and Question 31 (Section V) 'problems with work' was perfect, and therefore affected the analysis. Another reason for the question's exclusion was that few respondents answered it since they were not trying to abstain during their last month of drinking. It is suggested that this question also be excluded from future versions of the AIAU.

### *Item Analyses*

There were highly significant differences between the two groups on all items ( $p < .001$ ). These results suggest that the questionnaire measures alcohol dependence, and hence that the AIAU has criterion group and content validity. In terms of face validity, the AIAU was well received by the adult population.

## **Comparison of the Alcohol-Dependent and Control Samples on the AIAU Scales**

Analyses of variance performed on the frequency, quantity and dependence scores of the AIAU revealed significant differences between the community control and alcohol-dependent groups on all three variables (see Table 3).

Table 2

Factor loadings on 3 factors of the AIAU for Community (C) and Alcohol-dependent samples (A).

Items	Factor 1		Factor 2		Factor 3	
	Classic		Withdrawal		Social	
	C	A	C	A	C	A
Morning drinking	.32	.65				
Drinking alone	.22	.58				
Secret drinking	.09	.43				
Drink regardless	.61	.61				
Unpleasant feeling	.39	.39				
Sleep disturbed	.21	.48				
Meals missed	.46	.64				
Hangovers	.36	.38	.62			
Think of drinking	.51	.63		.34		
Crave to drink	.70	.61		.32		.43
Blackouts	.57			.53		
Sex				.30		.29
Drunk	.55	.45			.44	
Unable to stop		.55			.54	
Responsibility	.35	.35			.55	.34
Vomiting		.48	.78			
Heart racing		.38	.60	.38		
Seeing things			.64	.88		
Feeling things			.71	.65		
Hearing things			.74	.76		
Passing out			.46	.37		
Shaking		.63	.54	.32		.30
Sweating		.57	.48			
Spouse problems	.52				.45	
Work/study		.54	.40			.48
Police trouble			.38		.78	.65
Family problems					.67	.52
Friend problems					.53	.67
Strangers trouble					.42	.56
Drink driving					.28	.22

### Erratum

On page 6 (Table 2), the .29 factor loading for sex should be in the control column and the 0.45 factor loading for spouse problems should be in the alcohol dependent column.

Table 3

Mean scores on frequency, quantity and dependence scales in Alcohol Dependent and Control samples

	Frequency	Quantity	Dependence	N
<b>Alcohol-Dependent</b>				
Age < 34	21.50	225.77	56.81	80
> 35	23.27	241.77	60.91	93
Unskilled	21.45	219.76	63.23*	87
Semiskilled	23.46	249.13	54.75*	86
Total	22.45***	234.36***	59.02***	173
<b>Control</b>				
Age < 34	9.42	45.20**	8.95***	107
> 35	11.19	27.28**	3.63***	86
Unskilled	10.58	51.24*	8.09	82
Semiskilled	9.93	26.85*	5.46	111
Total	10.21***	37.22***	6.58***	193

\* p<.05  
 \*\* p<.01  
 \*\*\* p<.001

As expected, in the control group age was significantly related to the quantity of alcohol consumed ( $p < .005$ ) and the alcohol dependence score ( $p < .001$ ). There were no significant relationships between age and frequency of consumption. There was a statistically significant relationship in the control group between occupational status and the quantity of alcohol consumed ( $p < .03$ ).

In the alcohol-dependent sample the only statistically significant relationship was between occupational status and the dependence score ( $p < .03$ ). None of the other demographic variables showed any statistically significant effects, either separately or in combination, on any of the dependent variables. This result was unexpected, and suggests that alcohol-dependent subjects are unaffected by pressures associated with social roles as far as their drinking behaviour is concerned.

#### *Path Analysis Results*

As a first step in the analysis, the intercorrelations for each of the variables to be included in the path analysis were calculated. These correlations indicated that the external variable, peer use, had the most consistent influence on the internal and dependent variables and that there was an absence of internalised effects for the alcohol-dependent group in comparison to the community control group.

The path analysis was performed using the method of least squares and assumed that there were no latent variables. When more is known about the phenomena under investigation, it may be possible to apply more sophisticated path-analytic methods to the data, such as maximum likelihood estimation using LISREL. However, at the time of the study it was decided that interesting results could be obtained without making a large number of untestable assumptions.

A two-stage path analysis was conducted. In stage one, each of the internalised variables (the subject's preferences and norms) were predicted from the following external variables: alcohol

use and norms of the subject's mother, father, spouse, and peers. In stage two, the dependent variables alcohol frequency, quantity and dependence were predicted from all 10 variables (internal and external). In path analytic terms, this meant that each variable was predicted from all variables to the left of it in the path diagram (Biddle & Marlin, 1987). A path was omitted from the diagram if the path coefficient was not significant ( $p < .01$ ).

Standardised coefficients were interpreted because they are scale free and simple comparisons can be made of the sizes of various effects (Biddle & Marlin, 1987). However, a disadvantage of standardised coefficients is that they cannot be directly compared across different populations (James, Mulaik & Brett, 1982). Both the standardised and unstandardised coefficients are represented in the path diagrams in this study, the latter in parentheses, so that comparisons may be made within and between groups (see Figures 2 & 3). The multiple R-square values are provided on the diagrams above the boxes representing the variables.

The path diagram illustrated in Figure 2 suggests that alcohol-dependent subjects' use of alcohol (measured by frequency, quantity and dependence scores) is directly and positively influenced by peer use of alcohol. The only other significant effect was negative and direct; i.e. the more peers thought people should not drink, the more dependent the subject was. No indirect effect was statistically significant.

Figure 3 illustrates the path effects for the community control group. The predominant direct influence was that of spouse norm on quantity and dependence scores. These were the only negative effects in the community control group findings. Another direct influence was the effect of peer use on subject quantity and dependence scores. Fathers' norms and peer use influenced subjects' preferences, which in turn influenced their frequency of use and dependence on alcohol. Peer use was the only influence on subjects' own norms which, in turn, influenced the subjects' frequency of use.





The main difference between the alcohol-dependent and community control group findings was the absence of indirect effects in the alcohol-dependent sample. The main similarity between these two groups was the predominant influence of peer use.

To statistically determine the relative degrees of influence from direct and indirect effects the following analysis was performed. The proportion of variance within the dependent variables, explained by preferences and norms, was first calculated. The results showed that direct effects (particularly on dependency) were much greater than indirect effects for the alcohol-dependent subjects. The direct effects were also more influential on the control subjects, but the difference was not as marked and varied according to the dependent variable being measured (see Table 4).

#### *Path Analysis Discussion*

In terms of the second question the study addressed, there were considerable differences between the findings of adolescent studies

(Biddle et al., 1980a, 1980b; Bank et al., 1985; Webster et al., 1988) and the findings of this study on adults. Although a direct comparison cannot be made between the different studies because of the different methodologies employed, a comparison can be made of the coefficients for preferences and norms in each study. In Bank et al's. (1985) Australian sample there was a difference of .30 between the path coefficients of preferences and norms. In the Newcastle sample the difference was .46 (Webster et al., 1988). In our study the difference was .09 which demonstrates the similarity between the effects of preferences and norms on alcohol use in the adult control population.

The last finding was contrary to expectation, as it had been expected that the adult sample would exhibit stronger normative influence than the adolescent sample. Instead, preferences influenced both frequency and dependence, whereas norms influenced only frequency. The findings suggest that adults are no more likely to do as they think they should than are adolescents. This result is consistent with that obtained by Kilty (1978) using a different model and

*Table 4*

Proportion of variance accounted for by direct and indirect effects for adolescents and adults (alcohol-dependent and control groups) on frequency and quantity of alcohol use.

Sample	Variables	Combined Indirect	Combined Direct
Adolescents	Quantity	.37	.26
	Frequency	.35	.26
Alcohol-dependent	Quantity	.02	.08
	Frequency	.01	.08
	Dependence	.04	.31
Control	Quantity	.12	.23
	Frequency	.23	.14
	Dependence	.10	.19

whereas norms influenced only frequency. The findings suggest that adults are no more likely to do as they think they should than are adolescents. This result is consistent with that obtained by Kilty (1978) using a different model and procedure.

The adults' preferences indicated that perhaps adults do not drink solely for the enjoyment of drinking, which suggests that they may have other internalised reasons for the use of alcohol, such as, being sociable, or following the norms of expected behaviour of one's peers. Future research may examine the role of other possible influences, for example, locus of control, other personality variables, or the perceived social benefits of drinking.

In terms of the third research question - the role of social processes and the relative importance of direct and indirect effects on alcohol dependence - there was less difference between the adolescent and adult control samples than there was between the adolescent and alcohol-dependent adult samples. The adolescent subjects were more influenced by indirect effects, whereas the adults were slightly more influenced by direct effects.

The increased direct effect on the quantity of alcohol consumption by the adult subjects, especially in the community control group, may reflect the Australian practice of "shouting" in which drinkers are encouraged to keep up with their drinking 'mates' by taking their turn to buy a round of drinks for the group. The frequency of alcohol use for the control group of adults appears to be influenced by a different process since the indirect effects were greater. Further study of this process would be theoretically interesting.

Considerable differences were noted between the alcohol-dependent and community control subjects on the path diagrams. The most obvious difference was the absence of internalised effects for the alcohol-dependent adults, which suggests that dependence is established when internalised values have no effect on behaviour. Since this phenomenon may be idiosyncratic to these cross-

sectional data, a longitudinal study may be required to substantiate such findings. Another notable difference was that the control groups were influenced in a negative direction by their spouse's norms. That is, a prohibitive spouse norm was associated with higher quantity and dependence scores. This finding is consistent with results reported by Linsky, Colby & Staus (1986). The only similarity between the control and alcohol-dependent groups was the direct influence of peer use on quantity and dependence scores.

While useful results have been obtained using a cross-sectional approach there would be considerable advantage in obtaining longitudinal data. It might be possible to re-administer the AIAU to a substantial number of the original alcohol-dependent subjects. These subjects have experienced different forms of treatment and it may be important to determine what changes this treatment might have made to the level and effectiveness of internalised norms with relation to behaviour.

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