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RESEARCH REPORT

Influence of religion and culture on drinking behaviours: a test of hypotheses between Canada and the USA*

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Abstract

American Roman Catholic and mainstream Protestant students consume more alcohol and have more alcohol abuse problem compared to Canadian students within the same religious groups. Among abstinent oriented Protestants there was no difference in regards to alcohol consumption or problems related to drinking between the countries. For Jews there were mixed results with Americans exhibiting similar consumption rates but reporting more problems related to drinking compared to the Canadians. Among this sample it was concluded that religious norms have a greater influence in cohesive religious groups while cultural norms are more influential among less cohesive groups. The results also support the Canadian 'Mosaic' and American 'Melting Pot' assumption.

Introduction

The differing roles of religion and culture on social problems have been discussed in the literature for a relatively long period of time. Within the college population, there have been a number of studies that have addressed the issue. The finding that Jewish college students in the US are more likely to drink and to experience drinking related problems compared to Jewish college students in Israel (Engs, Hanson & Isralowitz, 1988) has led to the suggestion that culture is more important than religious background in terms of drinking patterns. It appears that drinking problems and patterns tend to change as individuals interact with those individuals of religious or cultural backgrounds that stress different drinking norms (Greeley, McCready &

Theisen, 1980). Studies In the US (Hanson & Engs, 1987; Berkowitz & Perkins, 1986; Hilton, 1986; Engs & Hanson, 1985; Beckman & Bardsley, 1981; Nusbaumer, 1981), Australia (Engs, 1980) and England (Jolly & Orford, 1983) reveal that drinking behaviours of collegians and others tend to be associated with religious affiliation. Thus, abstinence oriented groups are less likely to drink compared to either Roman Catholics or mainstream Protestants within a society. (Abstinent oriented Protestants are identified as religious groups whose norms endorse abstinence. Examples are Mormons, Seventh Day adventists and Nazarenes. Mainstream Protestants have no norms or sanctions against alcohol consumption. Examples are Anglicans, Presbyterians and Lutherans). In most studies, Jews have been found to be more likely to drink compared to these other groups but have fewer drinking-related problems (O'Brien & Chafetz, 1982).

These differences in behaviours are thought to result from divergent values and beliefs concerning alcohol held by different religious groups. Some religious groups teach that alcohol is a food and an important part of family life as well as part of the religious ritual. Others believe that any kind of alcohol consumption is a sin, associated with negative moral character.

In terms of the influence of a culture upon drinking patterns and problems, studies have shown that different countries have different drinking patterns and problems (Isralowitz & Hong, 1988; Engs & Rendell, 1987; Wilks & Callans, 1984; Anderson, 1984; Simpura, 1981). It is assumed that the different values, public policies, politics and economic systems of countries lead to these differences in alcohol consumption and problems within a particular country.

The results of these various studies lead to the logical question: Is religion more important or is culture more important in influencing drinking behaviour among collegians? One way in which to examine the relative influence of these two variables would be to compare the drinking behaviours of religious groups in two similar but culturally distinct countries. People living in Ontario, Canada and the North Central ('great Lakes') area of the US have a number of similarities in their living situations and lifestyles. They both speak English and their legal and political systems, although different, have their origins in Britain. They were both settled early by immigrants largely from the British Isles and Europe, with immigrants from other areas of the world arriving at later dates. They enjoy a relatively high standard of living. Both experience all four seasons and engage in recreational activities year-round in which alcohol plays a role. The actual size of the populations notwithstanding, relatively equal proportions live in rural areas and derive their livelihood from the land. On the other hand, there are large metropolitan areas in both countries which have individuals from a variety of ethnic groups.

However, the common view is that Canada is a 'mosaic', in which different cultural groups tend to be socially intact and maintain their cultural identities. In fact, the validity of this multi-cultural identity has been written into the Canadian Constitution. At the same time, the US is considered a 'melting pot' in which a sizeable proportion of individuals socially interact and merge into the fabric of the American society. This distinction is expected to affect the drinking pattern of students, especially if the cultural patterns of parents are maintained by the students, as

suggested within the Canadian mosaic pattern. The utility of this distinction has recently been demonstrated (Engs et al., 1989).

It is assumed that in the Canadian mosaic there is a maintenance of religious norms, whereas in the American melting pot there is a modification of religious norms tending toward homogeneity. Therefore, three null hypotheses were posited: (1) within each culture there will be no significant differences between the various religious groups in either alcohol consumption or alcohol-related problems; (2) among drinkers within the Roman Catholic, mainstream Protestant or abstinent oriented Protestant groups, and Jews there will be no significant differences between the two counties in the amount of alcohol consumed or number of drinking related problems; (3) it is hypothesized that among all students within each of the religious groups, there will be no significant differences in the percentages of Americans who drink compared to Canadian collegians.

Thus, the purpose of this study was to test hypotheses examining the relative influence of culture versus religion in regard to drinking behaviours and problems among collegians.

Method

Sample

Canadian. The Canadian sample was composed of students attending four universities, representing different geographic regions of the province of Ontario. These included urban, suburban and rural locations. Each university was asked to select randomly by computer the names and addresses of 4000 full-time undergraduate students who were attending classes during the 1987-88 academic year. Equal samples of first, second, third and fourth year students were selected at each site. Two universities complied with this, and forwarded the lists to the authors. One small university requested only 1200 students and the fourth university sent out the surveys directly. Reminders to students were made through announcements in student newspapers or mail boxes. A total of 4911 students completed and returned the usable questionnaires.

American. The American sample consisted of students attending 15 universities from the North Central (i.e. Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin) portion of the country (NIAAA, 1975) during the 1987-88 academic year. This North Central sample was selected from a larger sample of university students from every state in the US. It was assumed that students from this geographic location most closely resembled the Ontario sample and would be a better match for comparative purposes than the entire American sample.

The larger American sample is part of an ongoing study of drinking patterns and problems of students attending 4-year colleges and universities from every state in the country for which data have been collected every 3 years since 1982 (Engs & Hanson, 1988). The institutions were initially selected as part of a quota sample which represented all 4-year institutions of higher

education in terms of financial control, number of students enrolled, and the size of the community. Contacted at each university were sociology, health or physical education faculty who teach survey type classes which have a high probability of containing students from every academic major and class level. They were asked to administer a self-report questionnaire to the students in the classroom and return the questionnaires to the researchers. The resulting American sample from the North Central portion of the US included 1687 students.

Of the Canadian students sampled, 62.5% were female while in the American sample 64.7% of the students were female. Other demographic variables including year in school and religious affiliation were comparable.

Survey instruments

The Student Alcohol Questionnaire (SAQ) developed by Engs (1975) was used for the American sample. The Canadian sample was tested with a questionnaire which included the Ontario Drug Use Survey Investment (Smart, Adlaf & Goodstadt, 1985), the 17 problems related to drinking from the SAQ, measures of alcohol consumption and general lifestyle questions. Both these questionnaires are anonymous, pre-coded instruments which have been approved by the appropriate ethics and human subjects committees.

Alcohol consumption

Based upon a method suggested by Lemmens, Tan & Knibbe (1988), and adapted by Gliksman, Engs & Smythe (1989), the number of drinks consumed on a weekly basis were computed using the following steps. Both instruments assessed the usual frequency and quantity of beer, wine and spirits consumed by students. Both questionnaires also quantified the frequency of consumption for each beverage type using a five-point scale. These frequencies of use responses were assigned constant values for individuals who reported they consumed the product as follows: every day = 7; at least once a week, but not every day = 3.5; at least once a month, but less than once a week = 0.5; more than once a year, but less than once a month = 0.12; once a year = 0.02.

In terms of quantity, the Canadian survey requested the actual number of drinks consumed for each beverage type on one occasion. However, the American survey quantified consumption into five categories. Using these five categories. In order to compare the two countries, data in both samples were recoded in the following manner: more than 6 drinks = 8; 5-6 drinks = 6; 3-4 drinks = 4; 1-2 drinks = 2, less than 1 drink = 0.5.

Finally to compute the total number of drinks consumed on a weekly basis, a quantity/frequency score was computed by multiplying the recoded quantity by the recoded frequency weight for each beverage type and adding the three scores together. Thus for example, an individual who reported drinking more than six drinks per occasion, and doing so at least once a week, but not every day, would have an estimated weekly consumption figure of 28 drinks. It is conceivable

that this method may result in either an over or under estimation of consumption. However, in the present case this issue is not of concern because the measure is a comparative one, and both samples have been subjected to the same systematic sources of error.

Problems associated with drinking

Only students who reported drinking at least once a year were asked to report on problem behaviours associated with drinking. For purposes of this analysis, even individuals who reported drinking only once a year were considered drinkers. A series of 17 potential negative consequences of abusive drinking (Engs, 1977) were listed and students were asked if they had experienced any of them. If students indicated that they had experienced a problem at least once during the past year, the item was given the value of 1. Values were summed to generate a total problems score for each student.

Table 1. Religious affiliation of Canadian and American samples

Religious affiliation	Canada	US
Roman Catholic	1469 (37.6%)	672 (44.0%)
Protestant (allowed to drink)	2171 (55.6%)	675 (44.2%)
Protestant (not allowed to drink)	151 (3.9%)	158 (10.4%)
Jewish	117 (3.0%)	21 (1.4%)
Total	3908	1526

Analyses

The mean number of drinks consumed per week and the number of problems experienced during the preceding 12 months were each analyzed by means of a 2 (Country) x 4 (Religion) analysis of variance. Chi square analyses were used to compare Canada and the US in terms of the percentages of individuals experiencing specific problems in each of the four religious groups. All calculations were made using the SPSSX program at The University of Western Ontario.

Results

Students were categorized into religious groups based on their responses to the following question: "What religion were you brought up in?" with these response categories—Roman Catholic, Protestant (allowed to drink), Protestant (not allowed to drink), Jewish or other. Table 1 provides a breakdown of the two samples based on the four categories of religious affiliation. It should be noted that these figures represent only those students who fell into one of these four

religious categories. An additional 1003 Canadian students and 161 American students either fell into the 'other' category or left this question blank.

Comparison of alcohol consumption and related problems of drinkers only by country

Both the American and Canadian samples were further reduced on the basis of their indication of whether they drink at all. In other words, only drinkers were selected for the analysis of these variables. By removing the 4.8% Canadian abstainers and the 6.4% American abstainers, the final sample was made up of 3719 Canadian and 1428 American students.

Average weekly alcohol consumption

Main effects for each of the independent variables. Country ($F(1,5139)=19.3$, $p<0.001$) and Religious Affiliation were found. American students generally consumed more alcohol ($M = 14.2$) than did their Canadian counterparts ($M = 12.3$). In terms of religious affiliation, the data indicate that, Roman Catholics ($M = 13.0$) and Protestants allowed to drink ($M = 13.03$) drink more on a weekly basis than do either Protestants not allowed to drink ($M = 9.98$) or Jews ($Z=9.96$).

In addition to these main effects, the analysis also revealed a significant interaction which serves to qualify and perhaps further explain the two main effects. The interaction of Country by Religious Affiliation ($F(3,5139) = 2.90$, $p < 0.05$) is depicted in Fig. 1. From Fig. 1 it is apparent that although American students generally drink more than their Canadian counterparts, this is not the case for American Protestants whose denominations do not allow alcohol consumption. For every other religious affiliation the pattern of heavier alcohol use among American students persists.

Alcohol-related problems

As before, significant main effects were found for both Country ($F(1,5139)= 190.98$, $p<0.001$) and Religious Affiliation ($F(3,5139) = 8.00$, $p<0.001$), as well as the interaction of the two independent variables ($F(3,5139) = 2.58$, $p = 0.052$).

It appears that Canadian students generally experience fewer alcohol-related problems ($M = 2.25$) than do American students ($M = 3.30$). In addition, across the two samples, Roman Catholic ($M = 2.61$) and Protestants allowed to drink ($M = 2.56$) suffer more problems than do Protestants not allowed to drink ($M = 2.25$), who in turn experience more problems than do their Jewish counterparts ($Z=1.72$).

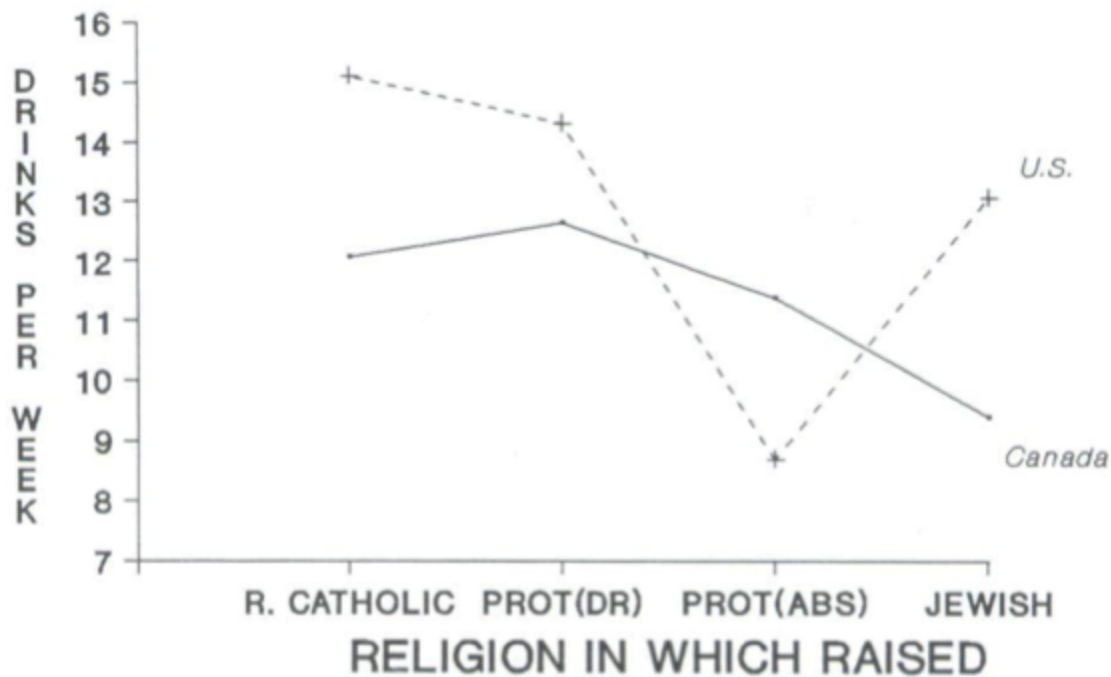


Figure 1. Weekly alcohol consumption by country and religion.

Again, the interaction of Country and Religious Affiliation serves to explain the two main effects, and is shown in Fig. 2. Interestingly, American students experience more alcohol-related problems than Canadian students regardless of the religion in which they were raised. The striking feature of this interaction is the wide divergence between Canadian and American Jews with the latter experiencing more problems than their compatriots of other religious groups, while the former experience the fewest problems of any of the groups in either country. That American Jews experience more problems than their Canadian counterparts is not surprising given that they drink more. What is surprising is that this group experiences as many problems as the two heaviest drinking groups—American Roman Catholics and Protestants who are allowed to drink. This latter finding is somewhat inconsistent with the results of other studies (e.g. Engs, Hanson & Isralowitz, 1988), and may reflect the small subset of Jewish students in both samples. In addition to an examination of the total number of problems related to alcohol which students have experienced, the individual problems were examined to determine whether there were any differences between students in the two samples within their religious affiliation. These data were analyzed by means of a series of χ^2 which looked at the proportion of students within each religious group who had experienced that particular problem at any time in the past year. The comparisons are shown in Table 2. Of the 17 problems investigated, more American Roman Catholics than Canadian experienced problems in 10 of the areas, more American Protestants who are allowed to drink than Canadian

in 10 of the area, more American than Canadian Protestants who are not allowed to drink experienced problems in three areas, and more American Jews than Canadian experienced problems in seven areas. The only problem which Canadian students experienced more than their American counterparts was with "cutting class after having a few drinks", and this occurred only in the Roman Catholic and Drinking Protestant groups. Generally, it is apparent that regardless of religious affiliation, American students experience more problems as a function of alcohol use than do Canadian students.

Discussion

The first null hypothesis, that within each country there would be no differences in drinking patterns and problems between the religious groups, was not supported. More specifically it was found that in Canada there were few differences between Roman Catholic and mainline Protestants, either for alcohol consumption, or the number of problems related to alcohol. However, more alcohol was consumed by these two groups compared to abstinent oriented Protestants or Jews, with Jews consuming the least.

In the American sample, Roman Catholics consumed the most alcohol followed by mainline Protestants, Jews and abstinent oriented Protestants. In the American sample a similar number of problems were experienced by all groups with the exception of the abstinent oriented Protestants who experienced fewer problems.

The second null hypothesis, which states there will be no differences within each of the religious groups between the two countries in terms of the amount of alcohol consumed or drinking problems was supported for the abstinent oriented Protestants and Jews but not for the other two groups. More alcohol was consumed by the Roman Catholic and mainstream Protestant Americans. A higher number of drinking related problems was exhibited by all groups, except the fundamentalists where there were no differences in the Americans as compared to their Canadian counterparts. The lack of differences among the abstinent oriented groups in the US and Canada may reflect the fact that their cohesiveness in drinking norms largely transcends cultural differences in their respective countries.

Table 2. The percent of students who have exhibited each of the drinking related problems in the past 12 months within each religious group and between countries

	Roman Catholics		Mainstream Protestants		Abstinent Protestants		Jews	
	Canada	US	Canada	US	Canada	US	Canada	US
1. Have had a hangover	65.5	74.2*	68.2	71.8	55.0	53.4	52.3	80.0*
2. Nauseated and vomited	42.2	53.7*	41.8	49.5*	32.1	33.9	26.6	65.0*
3. Driven a car after several drinks	18.1	47.0*	18.0	46.2*	18.3	39.7*	9.2	40.0*
4. Driven a car when you have had too much to drink	11.3	34.4*	12.1	33.5*	7.3	26.7*	4.6	35.0*
5. Drinking while driving	4.9	30.4*	5.7	31.4*	3.7	31.3*	1.8	20.0*
6. Come to class after drinking	11.7	9.5	11.0	8.4	10.1	6.9	11.0	10.0
7. Cut class after having several drinks	13.6	8.5*	13.2	9.0*	11.0	5.2	5.5	15.0
8. Missed class because of hangover	25.6	27.5	30.0	26.9	22.9	12.9	11.9	45.0*
9. Arrested for DWI	0.1	1.3*	0.1	0.6	0.9	1.7	0.0	0.0
10. Been criticized because of your drinking	8.6	11.4	8.2	10.9*	8.3	15.5	6.4	15.0
11. Trouble with the law because of your drinking	1.7	6.8*	1.6	6.3*	1.8	6.0	0.9	0.0
12. Lost job because of drinking	0.0	0.5	0.0	0.8*	0.0	3.4	0.0	0.0
13. Lowered grade because of drinking	4.6	5.5	4.5	4.9	4.6	7.8	1.8	10.0
14. Trouble with school administration	1.1	3.3*	0.6	3.0*	0.9	3.4	0.9	5.0
15. Got in fight after drinking	5.7	15.7*	6.9	13.0*	5.5	12.9	0.9	20.0*
16. Thought you might have a problem with your drinking	8.3	8.9	7.7	7.4	8.3	10.3	6.4	0.0
17. Damage property after drinking	5.3	11.9*	6.1	10.8*	8.3	5.2	3.7	15.0

* $p < 0.05$.

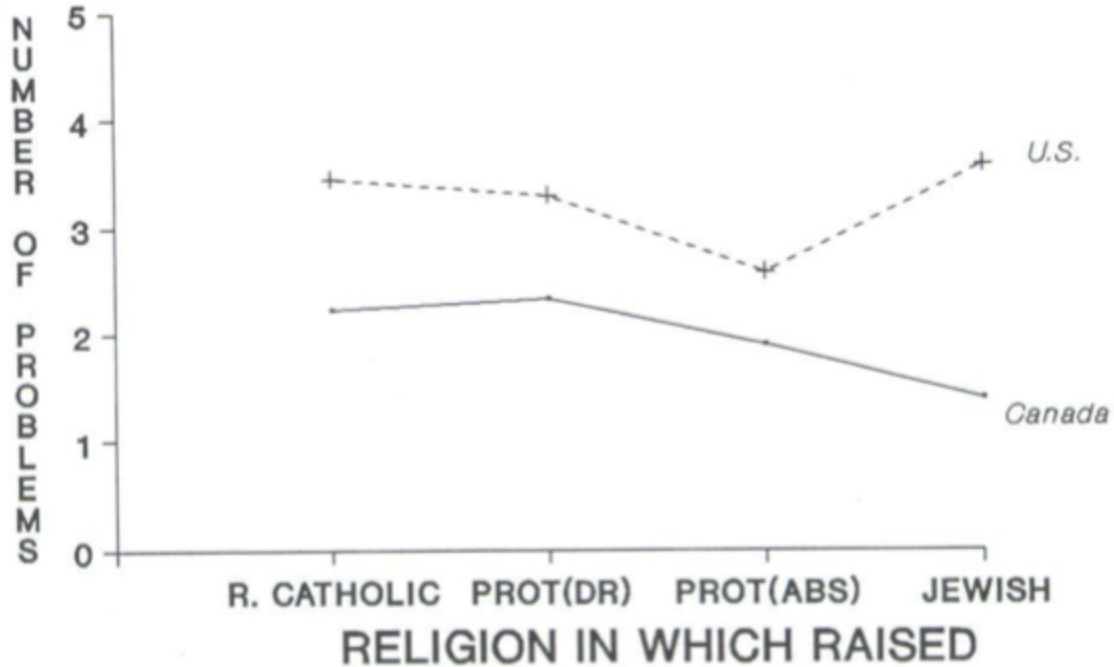


Figure 2. Alcohol-related problems by country and religion.

For Jews the results were mixed. Americans exhibited similar consumption rates but had more problems related to drinking compared to the Canadians. About half of all the problems were more likely to be exhibited by the American sample. There were no differences among the remaining items between the samples in both countries. This finding appears to support the American melting pot and the Canadian mosaic assumption. In other words, American Jews may be more assimilated into the fabric of American society. This would be reflected by the fact that more abusive drinking appeared to be the norm within dominant religious groups in the US and the American Jews were following this pattern. The Canadian Jews were more able to maintain the norms of less abusive drinking within their group due to cohesiveness. On the other hand, as suggested above, the small sample of only 21 American Jews may have led to erroneous results, and these findings should be interpreted with caution.

The third hypothesis, which stated that there would be no differences between countries in the percent of students from each religious group who consumed alcohol during the past year was supported. In all cases similar percentages of students drank between the two countries.

It is interesting to note that though there was no difference in the percent of students who drank between the two countries, there were more problems among the different American religious groups, with the exception of the fundamentalist students, and higher consumption within the

Roman Catholic and mainstream Protestant groups, compared to the Canadians. These results, however are consistent with reactance theory (Brehm & Brehm, 1981). A recent change in the law has made it illegal for individuals under the age of 21 to purchase alcohol in the US. Reactance theory would likely predict higher consumption and more alcohol-related problems because of heavier drinking because under-age students are likely to feel that their perceived right to drink had been unjustly denied (Engs & Hanson, 1989). However, for the American abstinent oriented Protestant group, for whom abstinence has always been the norm and expectation, the lower alcohol consumption would be consistent with this theory as they perceive they have nothing to rebel against.

The underlying research question for this study was whether religion or culture was more important in influencing drinking behaviour among college students. From the results of this study, it appears that religious norms have greater influence in cohesive religious groups and culture has greater influence in less cohesive religious groups in this sample of students.

Finally, some of the additional findings in this study may have significant ramifications for the introduction of public policy interventions. If unpopular laws lead to reactance, and if this is why American students drink more and have more problems than Canadian students, then the introduction of public policies without giving careful consideration to their unintended effects may be counterproductive. If laws or policies which are likely to be unpopular are introduced without some social marketing campaigns to counteract the effects of reactance, then they are better off not being implemented. Further research is required to determine whether reactance is the result of these interventions, and if it is, what can be done to counteract it.

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