

## CHAPTER 15

# Evaluating the Effect of Drinking Laws on Drinking

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ANYONE WISHING TO analyze the relation between laws and drinking behavior is faced with a somewhat discouraging task. In the first place, there is a large mass of historical records relevant to the subject, stretching back to Biblical times and including a vast diversity from the last century or so but few of these records allow any trustworthy conclusions on the effects of laws on drinking behavior. Time and again, when confronted with assessing the effects of a particular law, one is left wondering whether the law is a cause of change in behavior or an effect of antecedent changes in public sentiment. Was the decline in consumption in both the United States and throughout Europe in World War I a direct result of wartime restrictions? Were both the restrictions and the decline independent results of focused patriotic fervor and increased social cohesion in wartime? Or were both the result of changes in habits and sentiment that started in the prewar years?<sup>1</sup> The answer to all three of these questions, and to others like them, may well be "Yes, at least in part." All that analysis has accomplished is to beg the more difficult question of assessing the relative importance of the various chains of causation involved.

In the second place, the behavior involved is extremely complex. There is a wide range of possible meanings to the act

of drinking—a wider range, perhaps, than for any of the other behaviors which have been the traditional objects of sumptuary legislation. State liquor control laws usually state in their preamble that their object is to promote temperance, and they leave it essentially at that. This is, to say the least, not specific about the kinds of behavior the laws are intended to affect and effect. Such behavior has a number of different possible dimensions. Let us examine a few. First, there is the act of drinking itself. What is the goal of the law: abstinence rather than drinking; infrequent rather than frequent drinking, say once a week instead of twice a day; small rather than large amounts on an occasion—say, two drinks instead of twelve—or diminishing the intoxicating potential of the occasion, perhaps by stretching out its duration, by substituting a beverage with a lower alcoholic content, or by lining the stomach with food? On most of these dimensions, the range of possible human behavior is enormous—a minute between drinks or a year, a dash of alcohol or a bottle, a drunken feast or skipping meals while drinking.

Besides the act of drinking itself, there is the matter of who does the acting. Is drinking to be a privilege of the socially enabled—is it to be denied to youth and discouraged in the poor and among women? Third, there are the circumstances of the act—in a public or a private place, in a restaurant or a bar, with friends or with family or alone, while watching television or passing the bottle in a public park. And, finally, of course, there are the personal and social consequences of the act—drunk driving, accidents, cirrhosis, loss of control, break up of families, loss of job and of friendships, alcoholic psychosis—the whole dreary litany of possible bad ends the drinker can come to.

No doubt all these dimensions of drinking behavior bear some relationship to each other, but the relationship is certainly not uniform and direct. Historical instances abound in which legislation which promoted temperance on one of these dimensions hindered it on another. To cite one small example, the lately repealed laws closing bars at six o'clock in much of Australia, instituted as temperance measures by popular referendum during World War I, certainly got the working man out of the pub and perhaps home to his family in

time for dinner; but they also produced the custom known as the six o'clock swill, the main object of which was to pour as much beer as humanly possible down one's throat in the hour between the end of work and closing time. When one is gauging the effects of a law, then, even a law ostensibly narrow in scope, the analysis is complicated by the necessity of ranging widely across the kinds of dimensions of drinking behavior enumerated and presenting a kind of balance sheet of the various resulting changes in behavior.

A third factor inhibiting analyses of the relation between drinking laws and drinking behavior has been the preemption of scholarly attention and allegiance in alcohol studies, roughly since the coincident rise of Alcoholics Anonymous and the Yale Plan Clinics, by issues of social policy and provisions for alcoholism, viewed as a disease. Disease concepts of alcoholism, in defining the "problem" to be an attribute of the affected individual<sup>2</sup>—whether the "problem" is seen as an allergy, as an acquired tissue tolerance, or as a psychological dependence—have resulted in a de-emphasis of the context of social drinking out of which the institutionalized alcoholic emerges. They have also often carried the implication that there are two entirely different classes of phenomena, "normal drinking" and "alcoholic drinking," each irrelevant to the other. If loss of control is the salient issue, the actual amount and context of drinking are essentially immaterial. With this assumption, combined with the understandable priority assigned to research in the prevention and treatment of alcoholism, questions of the relation between legal and social arrangements and drinking behavior have generally been seen by researchers as just not an important topic for research.

The final discouragement in analyzing the relation between drinking laws and drinking behavior is its probable irrelevance to the policy-making process. The behavior of legislators, in this as in many other areas of sumptuary legislation, is determined not so much by considerations of rational policy—such as a consideration of the law's actual effects on behavior—as by the necessities of symbolic action: how will a particular vote on a piece of legislation look to his constituents and what will future opponents be able to make of it? For a

long period in American history, as Gusfield has cogently argued, "the liquor question" was the touchstone of an earlier manifestation of what has lately been christened the "social issue" in American politics—of a struggle for primacy in social status between opposed tendencies in styles of life—small town versus city, "old American" versus immigrant, the South and Midwest versus the Northeast.<sup>3</sup> The "liquor question" may now generate less political heat, the temperance movement may be a shadow of its former self, but the prudent legislator knows there is a large reservoir of sentiment, both dry and wet, in the voting population, so that he will generally lose the least votes by doing nothing.<sup>4</sup> In many states, the liquor control laws are essentially unchanged from their original passage on the repeal of prohibition.

When public policy is to be controlled by symbolic or moral considerations, facts are an irrelevance, and those who insist on discussions of rational considerations are if anything an annoyance. As seen recently in reactions to the national commission on pornography and the law—and as Socrates found out long ago—the very act of turning cherished assumptions about causes and effects into hypotheses to be tested may be viewed as an affront to the moral order.

The cumulative result of these discouragements and difficulties has been a small amount of learning from a large amount of experience. In spite of the considerable intervening history, understanding in this area has not greatly improved since, say, the work of the Committee of Fifty to Investigate the Liquor Problem at the turn of the century. It is still, then, a time for modest beginnings rather than august summations.

This paper is limited to a consideration of drinking laws and control measures which bear upon the general adult population, basically by manipulating the conditions of supply and the price of alcohol. I do not consider control measures which are aimed at specific portions of the population—for example, prohibitions of serving alcohol to certified alcoholics. Specifically aimed control measures, once widely used in Scandinavia and parts of North America, have been on the decline in recent years, partly because they have been found to be generally ineffective.<sup>5</sup>

### **Existing Data vs. the Ideal**

The kinds of data that are available for a consideration of the effects of generally applicable drinking laws on drinking behavior are, as I have mentioned, usually less than conclusive. In general, they fall into one of three categories: correlations of trends through space and time in various kinds of social statistics; measurements of behavior at a given point in time by surveys and other cross-sectional methods; and collocations of more or less systematic observations. None of these three categories of data is suited to establishing the nature and direction of causes and effects. Before making what I can of the data I found, then, I will spell out the nature of the data I would like to have found.

A model study of the effects of law on behavior, enabling one to get at least some leverage on the vexing problems of which is causing what, would require measurements of behavior, attitudes, and other data, both before and after the change in law, in the population affected and in an equivalent population not affected by the change in law. The "after" measurement should not be too soon after the change in law. National prohibition in the United States is a notable example of the common pattern of liquor law changes being more successful in accomplishing their aims in their first couple of years than thereafter. On the other hand, the longer the elapsed period, the larger the sample attrition, and the greater the likelihood of the intrusion of extraneous events. Given a desire to study the effects of introducing liquor-by-the-drink, for instance, and given sufficient funds, I would seek out a state or localities where liquor-by-the-drink was about to go into effect. I would select a matched state or localities where there was no liquor-by-the-drink, and preferably also places where liquor-by-the-drink already existed, matched as far as possible on size, composition, dry sentiment, and anything else I could think of which might conceivably affect the comparisons. I would certainly include some urban and relatively wet neighborhoods, since the little work in this area has been done exclusively on rural and relatively dry communities. I would conduct survey and other studies before and after the change in

law. And I would not expect the results of my work miraculously to cure the politicians' headaches by defusing all controversy on the subject.

There is to my knowledge exactly one published study of the effects of change in alcohol control policies which fills the model criteria I outlined above, a study of the effect of opening a state beer and wine package store in Finnish rural communities.<sup>6</sup> The study in fact found important shifts in drinking behavior in the communities where the stores were opened. But, as the author himself noted, "after five laborious years," the results of the study did not eliminate "divergencies of opinion." "If, let us say, at the Ikaalinen church village-market town the total consumption of alcohol among men increased during the period of the experiment by 40 percent, the use of illicit liquors was reduced by 50 percent, and excessive drinking remained more or less unchanged," there remains the question of "what alcohol policy value should be attached to this finding?"<sup>7</sup>

### General Theories of the Effect

Christie and Bruun have noted that discussions of alcoholism have been much afflicted with "fat words."<sup>8</sup> To the extent that there have been any general discussions of United States liquor control policies in the last forty years, they tend rather to be afflicted with fat theories—theories of the relation between drinking laws and drinking behavior which are inflated beyond the reach of the supporting evidence. I shall tease out three such grand hypotheses from the snarl of occasional literature on the subject, discuss their implications and assumptions, and attempt some preliminary evaluations of how well they fit the available evidence.

#### *The Null Hypothesis*

The first hypothesis to be considered, among those which can be found in the literature, is essentially a null hypothesis: that liquor control laws have no effect at all on drinking behavior, particularly on drunkenness and alcoholism. This hypothesis is a favorite of the alcohol beverage industry, which is quite comfortable with a great conceptual gulf fixed between normal social drinking—which the industry proudly serves—and alcoholic drinking—which the indus-

try deploras. Reacting to the New York State Moreland Commission's plans to study the effect of the liquor control laws on behavior, a liquor industry spokesman fulminated that "the problems of alcoholism and driving while intoxicated have nothing to do with the N.Y. State Liquor law, and never were intended to. As a matter of fact, I was amazed that the Commission had to spend the time and money to have a survey made to reach that startling conclusion. Anyone could have told them that."<sup>9</sup>

Ironically, Selden Bacon, whose study the liquor industry spokesman was attacking, has come quite close to embracing this hypothesis. Thus he has described as "inadequate or fallacious" the proposition that "the use and the evils of alcohol can be controlled by controlling production and sales, particularly the latter"; the conditions of sale, he affirms, are "*at best* peripheral to either *use* or *problems* of beverage alcohol"<sup>10</sup>; indeed, "for persisting, complex social problems . . . law can only play minor roles except for special purposes and short periods."<sup>11</sup>

There are two major lines of argument used in support of this hypothesis. One of them, used by the liquor industry spokesman later in the speech we have quoted, is simply to make reference to the "failure" of national prohibition in the United States. The problem with this argument is that prohibition did not fail, if by this is meant that it had no effect on drinking behavior. For one thing total consumption was actually lower during prohibition than before or after. In a careful and elegant study, Warburton concluded, on the basis of several independent methods of estimating consumption, that

during the early years of prohibition the per capita consumption of spirits was reduced approximately to two-fifths, and that of beer to one-fifteenth the pre-war level. In the four years from 1927 to 1930, . . . the per capita consumption of spirits averaged about 10 percent and of wine about 65 percent greater than from 1911 to 1914, while the consumption of beer was about 30 percent as great. The total consumption of liquor, expressed in terms of its content of pure alcohol, dropped during the early years of prohibition to one-third the pre-war level, . . . [and then rose to] two-thirds as great as prior to World War.<sup>12</sup>

Even if it is contended that the changes in consumption reflected historical trends to which prohibition was irrelevant—not a particularly convincing argument—it can hardly be denied that prohibition had some effects on behavior, even if not necessarily the intended effects. For one thing, as Warburton's estimates show, turning alcoholic beverages into contraband shifted the bulk of production and thus of consumption into the most easily produced and most concentrated forms.

The second line of argument, that adopted by Selden Bacon, is that the state liquor control systems now extant in the United States have "no demonstrable effect on the direct problems of alcohol or on the rate of consumption of alcoholic beverages."<sup>13</sup> The evidence offered in support of this, however, is actually directed at a quite different proposition, which is that the *differences* between the state liquor control systems now operating in the United States do not seem to result in demonstrable differences in social statistics on consumption or problems.

This second proposition derives some support from my reanalysis of data from Bacon's study and other sources:<sup>14</sup> interstate variations in control systems were entirely secondary to such factors as urbanization in the extent of their association with consumption and problems statistics; and they do not show strong associations either with trends in these statistics over time. I also attempted to measure differences at the level of individual behavior under different control systems in roughly comparable milieux, using the southern rural segment of a national survey.<sup>15</sup> The numbers involved were small and the findings equivocal, but in general it might be said that there was no strong evidence that control policies were having their intended effects: southern rural male white drinkers living in areas with no liquor-by-the-drink were if anything more likely than those living in places allowing bars to do their drinking "most often" in bars or restaurants.

Since the comparisons are across space rather than through time, and of static rather than changing control systems, these findings are not really conclusive regarding the second proposition. It may be, for instance, that the control systems are responsible for holding down differences in behav-



ior which would otherwise emerge. Christie has argued on the basis of comparisons of Scandinavian statistics that a strict control system may both reflect and cause extreme drinking behavior in the population controlled.

A strict system of legal and organizational control of accessibility of alcohol seems to be related to low alcohol consumption, but also to a high degree of public nuisance. The causal chain probably goes like this: A drinking culture with a large degree of highly visible, non-beneficial effects of alcohol consumption leads to a strict system of control which somewhat reduces total consumption, which again influences and most often reduces the visible problems. But also, the system of control influences visible problems—sometimes probably in the direction of increasing them.<sup>16</sup>

In comparisons of the southern region with other regions of the United States, there are patterns which suggest analogies with Christie's comparisons for Scandinavia.<sup>17</sup>

Even if the second proposition did turn out to be true—even if differences between state control systems in the United States do not affect individual drinking behavior—this is no proof of the original proposition, that liquor control systems have no effect at all. As Kettil Bruun has stressed, comparisons of the control systems themselves must pay at least as much attention to the actual functionings of the system as to their abstract legal framework.<sup>18</sup> U.S. control systems may well be more alike in their actual functioning than their legal frameworks would imply.<sup>19</sup> An institutional manifestation of this convergence is the Joint Committee of the States to Study Alcoholic Beverage Laws. Over the last twenty years, the executive officers of all the state control systems have been able to get together, with support from the alcoholic beverage industry, on studies of aspects of the control system.<sup>20</sup>

The only conclusive test of the original proposition that control systems have no demonstrable effects on behavior is, of course, to see what happens when control systems are changed. As noted, the one fully controlled study did find changes in behavior in rural Finland.<sup>21</sup> The evidence for urban areas is less formally established, but it is convincing. The introduction of controls in a situation of complete *laissez-faire* in eighteenth

century London did result in changes in behavior.<sup>22</sup> In the detailed accounts of the interaction between regulations and behavior in the day-to-day work of the Central Control Board (Liquor Traffic) in Britain during and after World War I,<sup>23</sup> there is abundant evidence that many regulations affected behavior. However, in such a situation of crisis consensus and flexible powers, the behavior also clearly affected the regulations. And in the United States, as we have seen, prohibition appears to have affected both the patterns and the magnitude of consumption.<sup>24</sup>

In its unvarnished form, the hypothesis just will not bear the weight of detailed scrutiny. A more reasonable restatement of the hypothesis, in the light of experience, would be that severe liquor control laws—those which cause more than inconveniences—have less affect on behavior than their proponents expect, and they tend to have adverse side effects which may come to be seen as outweighing any benefits. In a situation of limited consent, only limited regulations—and not all even of these—will have their intended effect, and they will thus be limited in their effects.

#### *The “Constant Proportion” Theory*

A second major hypothesis in the literature is what we might call the “constant proportion” theory: the proportion of excessive drinkers in a population directly depends on the amount of drinking in the population. This hypothesis has recently been restated by the staff of the Addiction Research Foundation of Ontario (ARF) with some emphasis. They discuss proposed changes in Canadian drug control laws in the light of experience with alcohol:

Any factor which raises average per capita consumption by the whole population also raises the proportion and absolute number of heavy users. . . . All users fit on a single curve falling smoothly from a high frequency of very light consumers at one end, to a small frequency of very heavy consumers at the other end. . . . Anything which raises the level of [social] acceptance tends to displace the whole curve towards the higher-consumption end, so that a larger absolute number of users exceeds the limit of “low risk” consumption. Legal measures, social controls, and educational programs may

therefore have to be aimed at reducing the general level of acceptance and use, if they are to have any success in reducing frequency of heavy use.<sup>25</sup>

This hypothesis is directly opposed to the general liquor industry theory, already alluded to, that normal drinking and alcoholic drinking have no relation to one another.

The "constant proportion" hypothesis is, of course, close to the rationale which underlay the temperance movement. If, as the early temperance movement quickly concluded, attempting to solve the liquor problem by reforming drunkards was like trying to catch all the fish in the sea with a fishing rod, perhaps the only sure and certain solution was to dry up the sea. Drunkenness would only be eliminated by procuring abstinence for all—at first, by voluntary pledges of abstinence, and later, by legal enforcement. In fact, a version of the "constant proportion" hypothesis was invoked by an abstinence advocate in his "exposé" of the Cooperative Commission's report:

It is very likely that the total number of drinkers would be increased if the Commission's recommendations are carried out. Therefore since we know that approximately 10 percent of all social drinkers seem destined to become problem drinkers or chronic alcoholics, how can we hope by the recommendations of this REPORT to *decrease* the number of problem drinkers?<sup>26</sup>

In fact the evidence for the hypothesis is not conclusive. The evidence cited by the Addiction Research Foundation statement in support of the "constant proportion" hypothesis is a study of the distribution of sales of wine and liquor-by-the-bottle in the provincial liquor stores in Ontario. Forty-two percent of all buyers bought only one bottle in a month, 20 percent bought two, 11 percent bought three, 7 percent bought four, and the remaining 20 percent were distributed in a long tail, in a curve which the authors describe as resembling the "logarithmic normal curve" which Sully Ledermann had previously found in his primarily French data.<sup>27</sup> On this basis, it is proposed that the logarithmic normal curve is generally "applicable to North American drinking behavior."<sup>28</sup> By

implication in the original study but explicitly in the recent ARF staff statement, the curve is proposed to be immutable, so that a rise in per capita consumption will automatically lead to a rise in alcohol problems.

The major conceptual problem with this chain of reasoning is familiar: essentially static findings of the distribution of drinking that exists in a population at a given point in time are somehow transformed into data which "establish" the manner in which changes must inevitably occur. The major practical problem is that the ironclad curve of distribution proposed just does not fit the variations in consumption patterns which can be found in different populations. For instance, in a national U.S. sample, comparing males age 21 to 59 in the highest and lowest socioeconomic status groups, 64 percent of all highest status current drinkers drink with at least moderate volume, and of those drinking with at least moderate volume, 55 percent drink with high volume. A smaller proportion (49 percent) of lowest status current drinkers drink with at least moderate volume, but of these a higher proportion (65 percent) drink with high volume.<sup>29</sup>

To question the interpretation placed upon these studies of the distribution of consumption is not, of course, to deny the value of the studies themselves. They have taught alcohol researchers a valuable lesson, which the alcoholic beverage industry learned long ago: that a small proportion of the population is responsible for the bulk of the total consumption of alcohol<sup>30</sup>—from a U.S. national survey, I made a rough estimate that 6 percent of the population accounted for 41 percent of the consumption, and 10 percent accounted for 60 percent.<sup>31</sup> And they have demonstrated that, at least with the scales used, the distribution in the populations studied is unimodal—there is no "bump" at any particular higher level of consumption. As de Lint and Schmidt note, this suggests that there is no distinct pattern of alcoholic drinking which is set apart from the continuum of normal drinking.

The distribution curves found in these studies might profitably be viewed in the light of an older and more general formulation, Allport's "J-curve hypothesis of conforming behavior."<sup>32</sup> On the basis of studies of the distribution, for instance, of the timeliness of workers' arrivals at their job,

Allport formulated the hypothesis that "in a field of conforming behavior, the distribution of degrees of conformity upon their appropriate telic continuum is in the form of a curve of positive acceleration"—in other words, a "J-curve" which much resembles the distributions found for alcohol consumption. By a "field of conforming behavior" Allport means that there are definite norms involved, to which at least one-half of the population adheres. By "the appropriate telic continuum," he means that the distribution must be plotted on a scale of constantly decreasing conformity, so that all conforming behavior is in the first category or so. Looking at the Ontario distribution in this light, one might speculate that the norm of behavior operating is the purchase of no more than one or two bottles a month, and that the "appropriate telic continuum" is therefore in the neighborhood of the scale used in the study—that is, bottles per month. If the scale used had been, say, ounces per year, the distribution might well be quite different—in fact, Ledermann and Allport agree that its general shape will be skewed and leptokurtic.

The advantage of this perspective is that it directs attention away from numerical formulae and the aesthetics of curve-fitting and back to the substantial questions of the nature and strength of drinking norms and their relation to conforming and deviating behavior. Allport, for instance, proposed that the distributions he found were the result of the interplay of four "component distributions," representing the factors of "the conformity-producing agencies, the common biological tendencies, the personality-trait distribution tendency, and simple chance." These are not necessarily the most appropriate factors for explaining the distribution of alcohol consumption, but they certainly suggest some directions in which to look.

There is what would seem on its face to be somewhat better evidence for the ARF staff thesis of a direct relationship between per capita consumption and the proportion of excessive drinkers, if liver cirrhosis deaths can be taken, as is by now traditional, as an indicator of excessive drinking. In a whole series of studies covering many years, analysts—many of them, as is also traditional in the alcohol literature, quite unaware of each others' existence—have shown that per capita consump-

tion, particularly of wine and spirits, tend to vary from year to year in the same population closely with cirrhosis deaths.<sup>33</sup> The correlations found have been consistently high. Several investigators have independently observed that cirrhosis death trends appear to lag consumption trends by about a year. Although such a short lag is surprising, since death from alcoholic cirrhosis is undoubtedly the outcome of a lengthy process, Terris has argued that this "is consistent with the clinical course of the disease. In many cases the cirrhotic process can be halted and decompensation prevented by avoiding further use of alcohol. Conversely, resumption of heavy alcohol use after a period of abstinence can decompensate a previously injured liver in a relatively short period of time."

On the face, then, these data would seem to offer indisputable evidence of a strong relationship between even short-term variations in the same population in per capita consumption and excessive drinking. I am, however, inclined to dispute. As I have already noted, consumption of alcohol is concentrated so that a small proportion of the population accounts for a large proportion of all consumption. Up to one-half of the total consumption is contributed by excessive drinkers, so that per capita consumption is at least partly a measure of excessive drinking. Further, relatively small changes in the drinking patterns of excessive drinkers will have a disproportionate effect of changes in per capita consumption. If light drinkers cut down from a couple of drinks a week to a couple of drinks a month, the effect on per capita consumption will be much less than if excessive drinkers cut down from getting drunk every day to getting drunk three times a week. Change in per capita consumption over time would seem, therefore, even more likely than per capita consumption per se to be primarily a reflection of the drinking patterns of excessive drinkers. I contend, then, that correlations of variations in cirrhosis deaths and per capita consumption, and particularly correlations over time in the same population (except perhaps in times of large scale shifts in consumption patterns) are high because they are both largely measures of the same thing—the drinking patterns of excessive drinkers.

#### *The Inoculation Theory*

The third major hypothesis in the literature might be

called the “inoculation” theory: the hypothesis that the proportion of excessive drinkers can be reduced by increasing the proportion of the population practicing certain styles of moderate drinking—perhaps by teaching teenagers how to drink. This is, broadly speaking, the position of the two books resulting from the work of the Cooperative Commission on Alcoholism:<sup>34</sup> “while it is impossible to foretell whether . . . a policy of both encouraging and discouraging certain types of drinking . . . would lead to an increase or decrease in the proportion of drinkers, it is likely that they would decrease the number of problem drinkers.”<sup>35</sup> Morris Chafetz, until recently the director of the National Institute of Alcohol Abuse and Alcoholism, also espouses this idea: “By providing educational information and experience with their peers in group settings at school, and by integrating their drinking experience with family use as well, immunization against unhealthy, irresponsible drinking behavior can be provided as a bulwark against alcoholism.”<sup>36</sup>

The evidence for the “inoculation” hypothesis is primarily drawn from comparisons of the drinking patterns of different cultural groups. Usually, the patterns of one or another culture or subculture are pointed to as an example of what is desired for the United States as a whole. There is no doubt that there are substantial cultural differences in drinking patterns—variations on each of the dimensions of the act of drinking enumerated above. Plausible hypotheses have been advanced to account for many of the differences. The problem, in fact, is that there are entirely too many plausible hypotheses and that the task of sifting through them for those that are not only plausible but verifiable has barely begun. Again, systematic studies of the correlates of changes over time are lacking, so that the advocates of the “inoculation” hypothesis, too, are left in the untenable position of basing conclusions about change on essentially static data.

Even if cultural determinants of drinking patterns can be identified, there is a further problem with the “inoculation” hypothesis—that these determinants may well be quite difficult to change. As Hiltner noted in his comments on Chafetz:

With limited exceptions, the types of cultures in which the relaxed-sip-with-food approach is manifested consistently are (to use the categories of Apollonian and Dionysian as deve-

loped by Ruth Benedict for anthropological studies) all much more Apollonian than are most American or Western European cultures . . . . What Chafetz seems, in effect, to be proposing is that we try to produce an Apollonian attitude about drinking—in a culture which is, in most other respects, strongly Dionysian. Can one such factor be shifted without some supporting shift in at least many other factors? The answer may not be an impossibility, but the difficulties are very great.<sup>37</sup>

A further difficulty, I suspect, is that some drinking patterns commonly ascribed to cultural styles might better be viewed as products of the position in the social system in which the members of the culture find themselves. For instance, it is hard to imagine what the cultures of many extraordinarily diverse American Indian tribes—not to mention the Australian aborigines—could have in common to explain their common pattern of widespread disruptive drinking. But it is easy to see what they have in common in terms of position in the social system. They are all peoples engulfed by a dominant and colonizing nation-state which denies their traditional tribal values and yet offers no functional position in which they can conform to its values. If this is true, the remedies for the drinking patterns are not so much difficult as costly—and at the expense of the dominant society: a restructuring of social relations, rather than the manipulation of cultural values, appears to be indicated.

### Toward a Synthesis

All in all, the available evidence does not allow of any definitive verdict on either the “constant proportion” or the “inoculation” hypothesis. They both offer fertile fields for further research, with important policy implications. However, the most likely result of this research, in my opinion, will not be a final proof of one and disproof of the other. Apparently the “constant proportion” and “inoculation” theorists are focusing on different aspects of alcohol problems as their criterion of individual behavior. Thus the criterion for the “constant proportion” theorists tends to be the long-term medical complications of chronic excessive drinking, associated with wet environments, while the “inoculation” theor-



ists concentrate on the social disruptions of explosive but often intermittent drinking associated with dry environments.<sup>38</sup> Clearly the discussions focus on quite different aspects of the potential legal and social control systems. Future work therefore seems most likely to result in the specification of definitions and conditions under which each of the possible relations between drinking controls and drinking behavior—positive, negative, and null—hold true.

There is, as mentioned at the outset, a plethora of scattered evidence available in the historical record from which this process of specification can start. A summary of the British experience with considerable experimentation with legal controls during and after World War I gives us a good idea of the kinds of relationships likely to be involved in the various methods of legal restriction and channeling of the general supply of alcohol, short of prohibition:

The people . . . submitted to limitation and reduced facilities, but deprivation they would not tolerate. . . . Under peace conditions the volume of intemperance can be kept far below the former level by means of shorter hours and higher taxation . . . . These measures have proved really efficacious, while others—particularly State ownership and control, the reduction of licensed houses, alteration of premises, disinterested management and supply of food—have failed to exert any perceptible influence on sobriety and public order.

But . . . however desirable the suppression of intemperance may be and however efficacious the methods just indicated, there are limits to their application; they cannot be effectively and safely pushed beyond a certain point. During the war they were carried as far as they could be without provoking reaction, and an attempt to carry them further had to be given up because of the resistance aroused. Nor is the issue merely one between liberty and sobriety; it is also one between increasing and diminishing sobriety. The assumption that measures which within limits conduce to sobriety by making excess difficult will continue to do so in proportion to their stringency is a fallacy. It has often been put to the test of experience, and always with the same result. When drinking by legalized channels is made too difficult, recourse is had to illegal ones, and the practice tends to spread with disastrous effects. . . . There are limits to the compulsory suppression of drinking,

and . . . when carried beyond those limits it defeats its own object by tending to promote more injurious forms of drinking and evasion of the law by common consent. Nor is it possible to counteract those tendencies in a free country for three reasons: namely, the ease with which alcoholic drink can be produced, the lucrateness of the illicit traffic, and the refusal of society in general to regard drinking as a crime, whatever the law may say.<sup>39</sup>

### The Effect of Prices on Drinking

As in the above quotation, discussions of the effectiveness of means of limiting “intemperance” by liquor control policies have generally centered around restrictions of supply—in space or in time—or of the relative price. Restrictions of supply also function as increases of the effective price, whether by restricting competition,<sup>40</sup> by creating a contraband market with a risk cost included in the price, or by increasing transportation costs (in money and time) of the beverage to the consumer or the consumer to the beverage. For the remainder of this discussion, therefore, I will focus on the evidence available concerning the relation between changes in the effective price of alcohol and drinking behavior.

In a comparison of a number of countries, Popham, Schmidt, and de Lint have found a strong relation between relative price and per capita consumption.<sup>41</sup> It is tempting to conclude from this that raising the price lowers the consumption; but this again is basing a dynamic conclusion on a static finding. The causation may indeed be more in the opposite direction. Governments are chronically short of money and historically have found sumptuary taxes such as those on alcohol very attractive: such taxes yield large revenues and can be justified as serving the public welfare. Thus the taxes on alcoholic beverages generally exceed the cost of production. The only obvious limit to the rate of alcohol taxation is the extent and depth of popular attachment to alcohol, which makes itself felt in a variety of ways—whether at the polls, by less formal methods of resistance, or through home brewing and the support of moonshine and bootlegging operations. In comparisons between countries, then, the relative price of alcohol may well be more a reflection of, than a control on, habits of consumption.

Dynamic data are available from a number of econometric studies of alcohol sales, primarily concerned with using regression equations to gauge the effect of variations over time in price and disposable income on per capita alcohol consumption.<sup>42</sup> The results vary quite widely, but the general weight of evidence seems to be that alcohol consumption is more influenced by income than price—that is, hard times have more effect than taxes—but that is not particularly “elastic” with respect to either. This means that it would require a rise in price of considerably more than 10 percent to effect a 10 percent decline in consumption.

One problem with these studies, at least for the United States, is the lack of a full range of experience which can be assumed to be relevant to modern times. Once the analyst excludes the special conditions of prohibition and the Second World War, he is left with six years of experience in the 1930s, plus the experience of the postwar period. And for all consumer commodities in the United States, “the postwar data are dominated to a considerable extent by trends . . . [by] the persistent upward movement in many of the consumption series. . . . Sustained economic growth is fine from a social point of view, but it makes life difficult for the econometrician.”<sup>43</sup> Thus Houthakker and Taylor find that the postwar data taken alone yield a positive price elasticity for alcohol—which, taken literally, would mean that a rise in price led to a rise in consumption.

There are some further problems with the application of the results of regression analyses in discussions of public policy. The models used in these analyses make a number of assumptions about the variables involved which may well not hold for alcohol consumption. For instance, the degree of change in a predictor is assumed to have a monotonic and simple relation (linear or logarithmic, usually) with the degree of change in the criterion. But, there are suggestions in the alcohol literature, as in the summary of British experience quoted above, that a severe measure may have a reversed effect from a mild measure. It is also assumed that effects are symmetrical, so that a rise in price will affect consumption to the same extent but in the opposite direction from a fall in price. But if some members of the population can indeed be said to lose control over their drinking behavior—which

implies that the behavior is more easily acquired than shed—it seems likely that the conditions for decreasing consumption would differ considerably from the conditions for increasing consumption.

A useful characteristic of the econometric studies is that they do allow for looking at alcohol consumption in the context of other consumer behavior, as Popham, Schmidt, and de Lint urge, rather than simply assuming “that the demand for alcoholic beverages [is] qualitatively different from that for other commodities and consequently not subject to the same factors as affect the demand for other consumer goods.” Houthakker and Taylor’s analysis, which presents equations for each of eighty-two classes of personal consumption, includes in its model a “stock coefficient,” which estimates the relative predominance in each class of consumption of “inventory adjustment” versus “habit formation”—that is, whether the fact of consumption in the immediately preceding time period tends to predict lesser or greater consumption in the succeeding time period. For example, buying a car last year could predict not buying one this year, because you already have a useful one (inventory adjustment), or it could predict buying another one this year because you like having a new car (habit formation).

As would be expected, alcohol consumption is estimated to be quite strongly subject to habit formation—more strongly, in fact, than tobacco products consumption. But there are eight other categories of consumption with higher habit-formation estimates than for alcohol. Furthermore, Houthakker and Taylor find that overall, “habit formation quite clearly predominates in United States consumption” and that the extent of predominance has increased over time. Sixty-one percent of total consumer expenditure is in the forty-six categories showing habit formation, while only 28 percent is in the fifteen categories showing inventory adjustment. It is suggested that increasing affluence is responsible for the rise in habit formation, so that a rise in disposable income means that clothes buying, for instance, becomes less a function of the wearing out of the stock on hand and more a function of expressive impulses and buying habits. At least within the terms of Houthakker and Taylor’s analysis, then, expenditures

on alcoholic beverages do show a considerable degree of habit formation, but in this they do not differ from a large and increasing preponderance of all consumer expenditures.

The major drawback of the econometric studies as evidence on the relation between control measures and drinking behavior is that they typically tell us nothing about variations in effects between subgroups of the total population. Even if one knows that an increase in price tends to cause a somewhat smaller decline in the total consumption, one does not know who is drinking less. Yet if a control policy is aimed, for instance, at reducing excessive drinking, it would clearly be important to know if it in fact affected only the behavior of light drinkers.

In this area, one is again in the realm of plausibilities rather than proofs. One thing which does seem clear is that change in the effective price affects the poor more than the rich. Advertisements for liquor addressed to the rich—for example, in the *New Yorker*—even make a virtue out of high price. Prohibition in the United States, in driving up the price of alcoholic beverages, seems to have accomplished a major shift in the distribution of consumption between the social classes. Under prohibition, the consumption of alcohol per capita by the working class declined by about 60 percent, but the per capita consumption “by the business, professional and salaried class [was] fully as great” toward the end of prohibition as at its inception.<sup>44</sup> This characteristic of raising the effective price will be regarded as a point in its favor by those, whether oligarchs or Marxists, who are particularly concerned to save working people from the evils of drink. From a populist perspective, or one of an insistence on equal protection of the laws, it tends rather to be an argument against. In any event, the net result of an increase in the effective price may be that the consumption, even though reduced, absorbs an increased proportion of the total family income. Thus Houthakker and Taylor, analyzing survey data on consumer expenditures, find for alcohol consumption, as befits a habit-forming commodity, that the proportion of income spent on alcohol became relatively higher for families whose income fell and relatively lower for families whose income rose.

On the crucial issue of differential effects by amount of

drinking, there is almost no direct evidence. Alcohol consumption is clearly more salient in general to heavy than to light drinkers. Heavy drinkers give more reasons for drinking than light drinkers,<sup>45</sup> and they are several times as likely as moderate drinkers to say they would miss drinking “a lot” if they had to give it up.<sup>46</sup> It is reasonable to expect, then, that the behavior of light drinkers will be the most amenable to change with a rise in the effective price. On the other hand, a great proportional change in the consumption of light drinkers will not greatly affect their family finances—or, as noted, the overall consumption statistics.

Increasing the effective cost of alcohol, then, will clearly pinch heavy drinkers much harder than light drinkers between two conflicting incentives—they have more to gain financially but also more to lose in gratification, from cutting down on consumption. The result will presumably vary from case to case. The consumption of affluent heavy drinkers, like that of affluent people generally, will no doubt be affected little. Terris notes that the cirrhosis death rate “is greatest in the lowest social class in the United States and in the highest social class in England and Wales,” and that the relative price of alcohol is much greater in England and Wales than in the United States. “Spirits have been taxed out of the reach of the lower social classes in the United Kingdom, where only the well-to-do can really afford the luxury of dying from cirrhosis of the liver.”<sup>47</sup> This pattern suggests that an increase in the general affluence of a society may result in a smaller proportion of heavy consumption being affected by control measures changing the relative price.

Poorer heavy drinkers will presumably take evasive action if possible, and their tenacity in this pursuit should not be underestimated. This is the segment of the alcoholic beverage market most affected by considerations of the “biggest bang for the buck,” that is, the greatest amount of absolute alcohol for the lowest price. When strong wines were introduced in rural Finland at a price which made them the cheapest source of alcohol, “within a few weeks the . . . stores which so far had been dominated by beer became dominated by wine.”<sup>48</sup> It seems plausible that the American “wino” would disappear if dessert wines became no longer generally the cheapest source of alcohol—but that he would be replaced by the inveterate

drinker of what became the best bargain. Schmidt and Bronetto mention this factor in explanation of their finding that wine consumption trends are more highly correlated than beer or liquor trends with U.S. cirrhosis death rate trends.<sup>49</sup>

Clearly evasions by poor heavy drinkers have their limits, particularly without a supportive social context of moonshining, bootlegging and homebrewing. Really poor or destitute heavy drinkers may in fact be forced into relative sobriety by a substantial change in effective price, and conversely, in prosperous times, when there is a place for them in the labor market, really heavy drinkers will find it easier to drink to oblivion. Any gains even in this population, however, must be weighed against possible increases in poisonings from nonbeverage alcohol and of malnutrition from skimping first on food.

### **Conclusion**

While general liquor control measures have the potential of affecting the whole population, their actual effects are different in different populations. Little enough is known about the net effects of control measures in the total population, but even less is known about their detailed effects in different segments of the population. Alcohol policies are in the end, of course, a matter of competing values and relative priorities. But it is hard to see how any policy, whatever its principles and aims, can make sense without just such a detailed knowledge of the shape of its practical effects.

As noted earlier, in the field of drinking laws and drinking behavior, the experience has been vast but the profit in terms of systematic understanding has been little. Hopefully, with some forethought, this equation may yet be reversed. A small amount of effort, when compared with the prodigious efforts which the experience already comprises, would go a long way toward clearing up some of the confusions and uncertainties found in this discussion. But this effort must be carefully planned, in terms of specific hypotheses to be tested and appropriate models for testing them. In particular, it should be emphasized that one cannot fully understand how and why behavior changes using static studies which describe conditions at a given moment in time. To understand change, one must study change.

## Chapter 15

1. R. Wilkinson, *The Prevention of Drinking Problems: Alcohol Control And Cultural Influences* (New York: Oxford University Press, 1970).
  2. R. Room, "Assumptions and Implications of Disease Concepts of Alcoholism," paper presented at the 29th International Congress on Alcoholism and Drug Dependence, Sydney, Australia, 1970.
  3. J. Gusfield, *Symbolic Crusade: Status Politics and the American*
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*Temperance Movement* (Urbana, Ill.: University of Illinois Press, 1963; reprinted 1966).

4. There is a large unorganized reservoir of ambivalence toward drinking even in the wetter states. This has recently been re-emphasized in discussions of the legal status of eighteen-year-olds, who are often cast in the role of moral surrogates in such situations. Thus the former governor of California commented that "having an eighteen-year-old, I still feel I should have enough parental control that I don't want her to go into a bar and buy a drink . . . I guess we'd all be better off if we didn't have a drink" (*San Francisco Chronicle*, 24 March 1971, p. 24). In a poll of adults in the same state on the extension of adult rights to eighteen-year-olds, there was 59 percent approval for voting, 59 percent for incurring debts and legal responsibility for them, 37 percent for gambling at state race tracks, but only 31 percent for purchasing liquor (*San Francisco Chronicle*, 9 March 1971, p. 8).
5. K. E. Lanu, *Control of Deviating Drinking Behavior: An Experimental Study of Formal Control over Drinking Behavior* (Helsinki: Finnish Foundation for Alcohol Studies, reprint from the English Summary in the Publication No. 2, 1956).
6. I have found two other published studies which bear some relation to the formal design as described. One is a before-and-after study, but with no control community, of the effects in a rural Saskatchewan community of changing the local "beer parlor" limited to men to a "license beverage room" serving also wine and open to both sexes [R. Dewar and R. Sommer, *The Consumption of Alcohol in a Saskatchewan Community Before and After the Opening of a New Liquor Outlet* (Regina, Saskatchewan: Bureau on Alcoholism, Department of Social Welfare and Rehabilitation, 1962)]. As might be expected, the study did not show any great changes in patterns of drinking. The other was a fully controlled study of "the preventive effect of fines for drunkenness" in middle-sized Finnish towns, in which the proportion of those arrested for drunkenness who were sentenced to a fine rather than being released the next morning was systematically reduced without any public announcement. This study concluded that the addition of a fine to the fact of arrest had no preventive effects: the arrestees did not even recognize that the policy had changed [P. Tornudd, "The Preventive Effect of Fines for Drunkenness: A Controlled Experiment," *Scandinavian Studies in Criminology* 2(1968):109-24]. Other Scandinavian studies are apparently in progress, but no report, at least in English, has yet appeared. There are by now a few well-designed studies of the effects of changes in drunk-driving laws.

7. P. Kuusi, *Alcohol Sales Experiment in Rural Finland* (Helsinki: Finnish Foundation for Alcohol Studies, 1957), vol. 3a.
  8. N. Christie and K. Bruun, "Alcohol Problems: The Conceptual Framework," ed. M. Keller and T. Coffey, *Proceedings of the 28th International Congress on Alcohol and Alcoholism* (Highland Park, N. J.: Hillhouse Press, 1969), 2:65-73.
  9. New York State Moreland Commission on the Alcoholic Beverage Control Law, *The Licensing and Regulation of Retail Package Liquor Stores*, New York, N.Y., Report and Recommendations no. 1, January 3, 1964, p. 26.
  10. S.D. Bacon, "American Experiences in Legislation and Control Dealing with the Use of Beverage Alcohol," in *National Conference on Legal Issues in Alcoholism and Alcohol Usage* (Boston: Boston University Law-Medicine Institute, 1965), pp. 123-41.
  11. S. Bacon, Abstract of "The Role of Law in Meeting Problems of Alcohol and Drug Use and Abuse," *29th International Congress on Alcoholism and Drug Dependence: Abstracts* (Sydney, Australia: 1970), p. 3.
  12. C. Warburton, *The Economic Results of Prohibition* (New York: Columbia University Studies in History, Economics and Public Law, Columbia University, No. 379, 1932; reprinted 1968).
  13. New York State Moreland Commission on the Alcoholic Beverage Control Law, *The Relationship of the Alcoholic Beverage Control Law and the Problems of Alcohol*, New York, N.Y., Study Paper no. 1, October 18, 1963, p. 54.
  14. R. Room, "Interrelations of State Policies, Consumption, and Alcohol Problems in the United States," in *Law and Drinking Behavior*, ed. J. A. Ewing and B. A. Rouse (Chapel Hill, N.C.: University of North Carolina Center for Alcohol Studies, 1971), pp. 56-78.
  15. R. Room, "Drinking in the Rural South: Some Comparisons in a National Sample," in *Law and Drinking Behavior*, ed. J. A. Ewing and B. A. Rouse (Chapel Hill, N.C.: University of North Carolina Center for Alcohol Studies, 1971), pp. 79-108.
  16. N. Christie, "Scandinavian Experience in Legislation and Control," *National Conference on Legal Issues in Alcoholism and Alcohol Usage* (Boston: Boston University Law-Medicine Institute, 1965) pp. 101-22.
  17. See notes 14 and 15.
  18. K. Bruun, "Implications of Legislation Relating to Alcoholism and Drug Dependence: Government Policies," ed. L. G. Kiloh and D. S. Bell, *Proceedings 29th International Congress on Alcoholism and Drug Dependence, Sydney, Australia, February 1970*, pp. 173-81.
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19. Some anecdotal evidence of this can be found in notes 1, 9, and 40.
20. See references in paper cited in note 14.
21. See note 7.
22. T. Coffey, "Beer Street: Gin Lane. Some Views of 18th Century Drinking," *Quarterly Journal of Studies on Alcohol* 27(1966):669-92.
23. H. Carter, *The Control of the Drink Trade in Britain* (London: Longmans, Green, and Company, 1919), and A. Shadwell, *Drink in 1914-1922: A Lesson in Control* (London: Longmans, Green, and Company, 1923).
24. See also other evidence in note 1.
25. Addiction Research Foundation of Ontario, "Summary with Comments on the Interim Report of the Commission of Inquiry into the Non-Medical Use of Drugs," *Addictions*, 17(Fall 1970):7-46.
26. L. Curtis, *The Million Dollar Report: An Exposé: A Self-Indictment* (Dallas: Tane Press, 1968).
27. J. de Lint and W. Schmidt, "The Distribution of Alcohol Consumption in Ontario," *Quarterly Journal of Studies on Alcohol*, 29(December 1968):968-73 and S. Ledermann, "Can One Reduce Alcoholism Without Changing Total Alcohol Consumption in a Population?" *Selected Papers Presented at the 27th International Congress on Alcohol and Alcoholism* (Frankfurt-am-Main, West Germany, 1964), 2:1-90.
28. J. de Lint and W. Schmidt, "The Distribution of Consumption," paper presented at the 28th International Congress on Alcohol and Alcoholism, Washington, D. C., 1968.
29. D. Cahalan, I. Cisin, and H. Crossley, *American Drinking Practices* (New Brunswick, N. J.: Publications Divisions, Rutgers Center of Alcohol Studies, Monograph No.6,1969).
30. M. Keller, "The Definition of Alcoholism and the Estimation of Its Prevalence," in ed. D. Pittman and C. Snyder *Society, Culture, and Drinking Patterns* (New York and London: Wiley, 1962), pp.310-29.
31. R. Room, "Concentration of Consumption: The U.S.," *Drinking and Drug Practices Surveyor* 2(Summer 1970):1.
32. F. H. Allport, "The J-Curve Hypothesis of Conforming Behavior," *Journal of Social Psychology* 5(May 1934):141-83. I am indebted to Don Cahalan and Ira Cisin for drawing this to my attention and for the benefit of our discussion in this area.
33. See note 1, pp. 229-232 and item 6 on p. 246; see note 12, pp. 74-86, also see K. Bruun, E. Koura, R. Popham, and J. Seeley, *Liver Cirrhosis Mortality as a Means to Measure the Prevalence of Alcoholism* (Helsinki: Finnish Foundation for Alcohol Studies,

- 1960, Vol. 8; J. Seeley, "Death by Liver Cirrhosis and the Price of Beverage Alcohol," *Canadian Medical Association Journal* 83 (December 24, 1960):1361-66; M. Terris, "Epidemiology of Cirrhosis of the Liver: National Mortality Data," *American Journal of Public Health* 57 (December 1967):2076-88; R. E. Popham, "Indirect Methods of Alcoholism Prevalence Estimation: A Critical Evaluation," in *Alcohol and Alcoholism*, ed. R. E. Popham (Toronto: University of Toronto Press, 1970), pp. 294-306; A contrary case, for a relatively limited span of years when there seem to have been considerable changes in the distribution of drinking in the population, can be found in note 30, p. 324. Popham found relatively high correlations in 15 time series, but one of them—for Britain—was highly negative.
34. See note 33, Terris p. 2086.
  35. T. Plaut, *Alcohol Problems: A Report to the Nation* (London, Oxford, and New York: Oxford University Press, 1967) p. 125 and see note 1.
  36. M. Chafetz, "Alcoholism Prevention and Reality," *Quarterly Journal of Studies on Alcohol* 28(June 1967):345-50. See also the discussions in the same and succeeding issues of the *Quarterly Journal of Studies on Alcohol*.
  37. S. Hiltner, "Alcohol Prevention and Reality: Comment on the Article by M. E. Chafetz," *Quarterly Journal of Studies on Alcohol* 28(June 1967):348-49.
  38. See note 14.
  39. See note 23, Shadwell pp. 149-50, 152.
  40. New York State Moreland Commission on the Alcoholic Beverage Control Law, *Mandatory Resale Price Maintenance*, New York, N.Y., Report and Recommendations No. 3, January 21, 1964.
  41. R. E. Popham, W. Schmidt, and J. de Lint, "Epidemiological Research Bearing on Legislative Attempts to Control Alcohol Consumption and Alcohol Problems," *Law and Drinking Behavior*, ed. J. A. Ewing and B. A. Rouse (Chapel Hill, N.C.: University of North Carolina, Center for Alcohol Studies, 1971), pp.4-16.
  42. See note 33, Seeley; New York State Moreland Commission on the Alcoholic Beverage Control Law, *Resale Price Maintenance in the Liquor Industry*, New York, N. Y., Study Paper no. 5, October 28, 1963, pp.52-54; J. Simon, "The Price Elasticity of Liquor in the U. S. and a Simple Method of Determination," *Econometrica* 34(January 1966):195-205; H. S. Houthakker and L. D. Taylor, *Consumer Demand in the United States: Analyses and Projections*, Second and Enlarged Edition (Cambridge, Mass.: Harvard University Press, 1970); B. Walsh and D. Walsh, "Economic Aspects of Alcohol Consumption in the Republic of Ireland,"

- Economic and Social Review* 2(1970):115-38.
43. See note 42, Houthakker and Taylor p. 145.
  44. See note 12, pp. 235, 240.
  45. See note 29, p. 167.
  46. D. Cahalan, I. Cisin, and H. Crossley, *American Drinking Practices: A National Survey of Behavior and Attitudes Related to Alcoholic Beverages* (Washington, D.C.: George Washington University Social Research Group, 1967), Report no. 3, p.224.
  47. See note 33, Terris p. 2086.
  48. See note 7, p. 173.
  49. W. Schmidt and J. Bronetto, "Death from Liver Cirrhosis and Specific Alcohol Consumption: An Ecological Study," *American Journal of Public Health* 52(September 1962): 1473-82.
  50. This work was partly supported by grants from the National Institute on Alcohol Abuse and Alcoholism (AA000275). A version of this paper was presented at the annual meeting of the Society for the Study of Social Problems, Denver, Colorado, August, 1971.