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AMOUNT OF DRINKING AND ALCOHOLISM

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A paper prepared for presentation at the 28th International Congress on Alcohol and Alcoholism, Sept. 15-20, 1968, Washington, D.C.

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December, 1967
Revised August, 1968

The research of which this paper is a part was supported by a grant (MH 09226) from the National Institute of Mental Health and was conducted under the auspices of the Mental Research Institute of Palo Alto, California.

ABSTRACT

Detailed quantitative reports on amount of drinking among those labeled as alcoholic have been rare, but are needed particularly to assess the anomalous findings in recent general-population studies that only bare majorities of variously-defined criterion groups of currently-drinking "alcoholics" report drinking three or more drinks on any occasion in the last year. In detailed reports on maximum daily quantities in four widely-scattered samples of institutionalized alcoholics, a majority of each sample reported drinking between about one and two pints of liquor or equivalent, but between 8% and 15% of each sample reported drinking one-half pint or less. Comparing lifetime very heavy drinking among 69 Veterans Administration hospital alcoholics and 184 primarily blue-collar general population males, 42% of the alcoholics (vs. 13% of the comparison group) reported drinking one-fifth gallon of liquor or equivalent at least 100 times, and 52% (vs. 21%) reported this frequency for a pint; but 12% (vs. 38%) reported never drinking one-fifth gallon, and 4% (vs. 23%) reported never drinking a pint. Two-thirds of the alcoholics (vs. 6%) thought they had ever been an alcoholic, and controlling by this response drastically reduced differences in drinking between the samples; but still only 63% of admitted alcoholics in the alcoholic sample reported drinking a pint at least 100 times. Some who are labeled as alcoholics drink less than is common in the general population. Nevertheless, the anomalous general-population findings partly result from using loosely-defined criterion groups: in a San Francisco representative sample (620 adults), a criterion group defined as in other surveys (including 10% of the sample) shows drinking patterns like theirs, but a severely-defined criterion group (2% of the sample) shows drinking patterns like those in institutionalized samples.

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I. INTRODUCTION

In recent years, there has been a growing realization that the label "alcoholism" comprehends a very wide variety of phenomena, which appear, in Jellinek's words, to "have only two elements in common: one is drinking and the other is damage (individual or social, or both) incumbent upon the drinking" (1). The implication of this perspective is that the pivotal characteristic distinguishing alcoholism from other diseases, vices and social problems--all of which presumably involve "damage"--is the fact that the "damage" done is attributed to the use of a particular mind-bender, ethyl alcohol. But while there have been some studies of the physiological limits on individual intake, some laboratory studies involving the sustained ingestion of large known amounts of alcohol, and a few reports of the blood-alcohol levels of emergency-ward cases with an admission diagnosis of "drunk," and while the many "drinking history" studies have asked groups of labeled alcoholics about practically every behavior, situation, interpersonal reaction, and psychological condition conceivably connected with alcoholism,[1] there are virtually no detailed reports of how much those labeled as "alcoholic" drink, of what, and how often.

The dearth of inquiries into what is at least a necessary condition for "alcoholism," however defined, seems unlikely to be simply an oversight. Perhaps the neglect of so obvious a question reflects a general presumption that the question is just not very interesting--that it can be assumed that alcoholics drink a great deal, indeed as much as is physiologically and contextually possible, and that knowing exactly how much "a great deal" is will not help understand or cure a condition generally considered to be actuated by physiological or psychological factors.

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[1] Some results from studies in this tradition are collated in Robin Room, "Data and Assumptions in Prior Surveys of Alcoholics and Alcoholism," DPS Working Paper No. 6, (August 1966, mimeo.).

But even if very heavy drinking is not regarded as in itself constituting a sufficient as well as necessary condition of "alcoholism," an investigation of how much alcoholics drink is of more than simple descriptive interest. In the first place, amount of drinking might well prove useful as a screening device for case-finding in a general population--in the form either of a very high amount which few but alcoholics exceed, although not all alcoholics exceed it, or of a lesser amount which all but a few alcoholics exceed, although some non-alcoholics also exceed it.

In the second place, amount of drinking can be used as a relatively direct and quantifiable indicator of individual behavior, in studying contingencies of the process of being labeled "alcoholic". Whatever their view of the ultimate etiology of alcoholism, investigators have long agreed that those actually labeled as "alcoholic", by whatever criterion, represent only a fraction of those who could be labeled under the same criterion; and it has long been suspected that factors operating at the collective level, as well as individual behavior patterns, affect the labeling process, so that a labelable individual's social category--his social class, sex, ethnic group, age, etc.--affects his chances of actually being labeled. Cross-tabulations of amount of drinking, as an indicator of individual behavior, by social category in the labeled and unlabeled population can serve as one mechanism for translating these suspicions into quantitative comparisons.

In the third place, some little-noticed findings in recent studies of drinking in general populations have rendered the question of how much alcoholics drink particularly crucial. Several of these studies, originally primarily concerned with describing the drinking practices of the general population, have been impelled, in shifting to an emphasis on the epidemiology of alcoholism, to define criterion groups of "alcoholics," usually by separating out from the general population those giving what are considered to be implicative questionnaire responses. Routinely, these groups were then asked questions on amount of

drinking; uniformly and disconcertingly, only one-half to two-thirds of each criterion group have given responses classified as "heavy drinking," even by the modest definitions developed to use in partitioning general populations (Table 1, Column 1). Even when asked if they had ever in the last year had three or four drinks (Column 3), no criterion group showed a unanimously positive response. Although, as we shall suggest, there are several possible interpretations and explanations of these results, they nevertheless point quite dramatically to the strategic importance of a knowledge of the relation between labeled alcoholism and amount of drinking.

II. AMOUNT OF DRINKING AMONG INSTITUTIONALIZED ALCOHOLICS

So far, we have been able to find four sources giving detailed distributions on amount of drinking for groups of institutionalized alcoholics:[2] a recent unpublished report on interviews with 1376 admittees to a Toronto alcoholism

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[2] Less detailed distributions on amount of drinking, which at least give more than a mean or range of levels of intake, are given in several European and Latin American reports on wine-drinking alcoholics:

(11)--daily intake of 100 alcoholic patients:
10% drank 1-2 liters wine;
22% drank 2-3 liters;
68% drank over 3 liters.

(12)--daily intake of 116 French hospital patients with alcoholic cirrhosis; matched with 116 non-cirrhotic patients from the same hospitals:
1% of cirrhotics, 51% of non-cirrhotics, drank less than 1 liter wine;
44% of cirrhotics, 43% of non-cirrhotics, drank 1-2 liters;
55% of cirrhotics, 6% of non-cirrhotics, drank more than 2 liters.

(13)--daily intake of 100 patients with Morgagni-Laennec's liver cirrhosis:
20% abstainers;
12% drank less than 3/4 liter wine;
39% drank 3/4 to 2 liters;
29% drank over 2 liters.

(14)--daily intake during period of heavy drinking of 49 Chilean psychiatric hospital patients with a diagnosis of alcoholic addiction:
51% drank 3-5 liters wine;
39% drank 6-10 liters;
10% drank 11-15 liters.

If we take a liter of wine to be equivalent to .58 pints of liquor in alcoholic content, the distributions on amount of drinking in (11) and (12) are roughly commensurate with those in Table 2A. The much lower distribution on amount of drinking in (13) is presumably attributable to the fact that the patients did not necessarily have alcoholic cirrhosis. The generally higher amounts drunk in the Chilean sample (14) may have resulted from more severe criteria for labeling, or from a culturally permitted more continuous drinking pattern, which is described in some detail in (15); among the 49 alcoholics, 100% reported regular drinking before breakfast, for instance, a much higher figure than is found in American samples of alcoholics.

Table 1.--Amount of Drinking in "Criterion Groups," Recent Household Surveys*

NATURE OF GROUP / STUDY	Quantity: Time Period: (N) OF GROUP	AMOUNT OF DRINKING ("Current" pattern except as noted)			
		Data from "QF" Questions		Data from "during past year" questions	
		3+ distilled drinks, or equiv.		3-4 drinks	7-8 drinks
		At least twice a week	In last year	Ever in last year	Ever in last year
A. Domiciliary "alcoholics," identified by agencies: (current drinkers only, except as noted)					
Cedar Rapids, 1964 (73 current drinkers)	88	45%[a]	60%[a]	80%[a]	45%[a]
Richmond, 1963	59	49%[b]	68%[b]	--	--
B. Ever Social Troubles due to drinking: (current drinkers only, except as noted)					
Washington Heights, 1964 (49 current drinkers)	62	44%[a]	--	--	--
Iowa, 1958	c. 75	49%	--	--	--
Nationwide, 1963	c. 105	28%	56%	--	--
Cedar Rapids, 1964	55	31%	53%	78%	31%
San Francisco, 1964	103	30%	50%	90%	63%
C. "High" Preoccupation with Alcohol (current drinkers only)					
Iowa, 1958	70	57%	--	--	--
Iowa, 1961	55	44%	--	--	--
Cedar Rapids, 1964	46	42%	63%	87%	48%
San Francisco, 1964	51	43%	63%	96%	76%

Notes to Table 1:

[a]These figures represent current drinking patterns for current drinkers, but patterns for before giving up drinking for ex-drinkers.

[b]These figures are for indicators only roughly analogous to the "QF" scale: 49% is the proportion who drink in any of the following patterns: at least twice a month, usually 5 or more drinks at a sitting of the most frequently-used beverage; at least three times a week, at least sometimes 5 or more drinks of the most frequent beverage; nearly every day or more often, at least sometimes 3 or more drinks of the most frequent beverage. The true figure for this sample in this column cannot exceed 70%. The second figure (68%) is the proportion drinking 3 or more drinks of liquor at least once a month: the true figure for this sample in this column would therefore be somewhat higher (2, pp. 8, 7, 5).

*The samples in Part A were collected specifically as criterion groups; of those in Parts B and C, apart from the San Francisco sample, all groups except the Iowa, 1958 "troubles" group have explicitly been treated by the researchers concerned as a "criterion group," that is, the indicator used has been taken as identifying at least approximately a group of alcoholics. For designation of the "troubles" groups as criterion groups, see respectively: (3, pp. 23-24; 4, pp. 645-6; 5, p.5); for such designation of the "preoccupation" groups, see: (6, pp. 484-487; 7, pp. 688-694; 5, pp. 4-5).

The sources and criteria for the data in this table are as follows:

Cedar Rapids, 1964 (5, pp. 26-27): "alcoholics"--living at home, known as alcoholics to two or more agencies, resource persons, or records; troubles--any of the following troubles due to drinking: threat of job loss, marital separation threat, family complaint about money spent on alcohol, police arrest, or physician's warning about health; preoccupation--steps I-III on an H-technique Guttman scale--see Mulford's publications and Robin Room, "Notes on 'Identifying Problem Drinkers . . .'", Drinking Practices Study, Working Paper No. 10, 1966.

Richmond, 1963 (2, pp. 8, 7): alcoholic clinic "deferred cases"--living at home, had contacted agency but "failed to follow through on treatment."

Washington Heights, 1964 (8, pp. 310-11): those who were identified in a 1960 survey by themselves or a family member as having had health, job, money, family, marriage or police problems due to drinking; and who also identified themselves in 1964 as having had health or money problems or household disagreements due to drinking.

Iowa, 1958 (9, pp. 283, 287): troubles: any troubles due to alcohol with spouse, friends, parents, police, and job; preoccupation: as for Cedar Rapids.

Nationwide, 1963 (4, p. 644): as for Cedar Rapids troubles.

Iowa, 1961 (7, p. 692): as for Cedar Rapids preoccupation.

The San Francisco groups are drawn from a weighted representative sample described in (10). The QF data are a close approximation of the QF scale using data from the 1962 interview; the "during past year" drinking data and preoccupation and troubles criteria are drawn from the 1964 reinterview of the same persons. Troubles is defined as at least one moderate or two mild problems due to drinking with: police, job, spouse, hospitalization, friends; preoccupation is a close replication of Mulford's scale; the "during past year" drinking items are four or more and 8 or more drinks.

clinic (16); a recent tabular report on the characteristics of 795 admittees to a Florida alcoholic rehabilitation center; a recent monograph on 42 cases of Delirium Tremens in Copenhagen (18); and a rather less recent report on "500 Inebriates, treated in the Kings County Inebriates' Home at Fort Hamilton, N.Y." in the early 1880's (19).[3] The Toronto report gives the "reported daily consumption" for 840 male and female alcoholics in ounces of absolute alcohol; the Florida report gives the estimated number of "ounces of pure alcohol patient reported drank per day in past year when drinking" for 782 male and female alcoholics; the Copenhagen report gives the "amount of alcohol consumed daily" in drinks and in equivalent grams of alcohol for 24 cases; the Kings County (Brooklyn) data reports the "maximum daily quantity consumed" as part of a tabular summary of each case, and, in 426 cases, gives a definite quantity of a particular beverage, sometimes in drinks or glasses, but more often in pints, quarts or gallons. The results of these reports were reduced to roughly comparable form, in terms of equivalents to pints of distilled beverages;[4] the distributions on amount of drinking of the three inclusive alcoholic groups, and of the Copenhagen DT's sample and the Brooklyn subgroup with a history of one or more attacks of DT's, are shown in Table 2.

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[3] Despite its auspices, this last publication appears to be carefully and meticulously compiled: as the Brewers' Association states in the Preface, "it would be worse than useless to claim that our motives are free from self-interest; we ask credit, however, for an honest endeavor to offer in this treatise authentic information on a subject, concerning which much has been published which rests on conjecture merely" (p. [iii]).

[4] The greater part of each sample drank mainly distilled liquor or beer or both: in Toronto, 62% drank liquor, 48% drank beer, 9% drank only wine; in Florida, 49% drank only whiskey or vodka, 2% drank only wine; in Copenhagen, 69% drank liquor, 79% drank beer, none drank only wine; in Brooklyn, 95% drank liquor, 29% drank beer and ale, less than 1% drank only wine.

Since categories did not match, the conversions to equivalents of a pint (American) of liquor are not exact. The equivalent of one pint was taken to be 12 drinks for the Copenhagen study; 7 ounces of absolute alcohol for the Toronto and Florida studies; and 12 drinks of distilled, and one gallon or 16 drinks of fermented, for the Brooklyn report. The World Almanac for 1890 gives as average percentages of alcohol by volume in 1880: beer, 4%; ale, 7.4%; distilled beverages, 51.6% (gin) to 54.3% (Scotch whiskey)--(p. 108). In the Brooklyn group, 58 of the 74 with no specific quantity were recorded as drinking "largely" or "plenty," 2 as "small" or "moderate." For the 21 men and 1 woman recorded with a definite range, the top of the range is used here.

Table 2.--Amount of Drinking per Day in Samples of Institutionalized Alcoholics

A. Total Samples:	All Institutionalized as Alcoholics			Institutionalized with Delirium Tremens	
	TORONTO 1951-62	FLORIDA 1962-63	BROOKLYN Early 1880's	COPENHAGEN 1961-62	BROOKLYN Early 1880's
Amount of Drinking* (in rough equivalents on alcoholic content to pints of distilled liquor):					
1/2 pint or less	15%	13%	10%	8%	6%
About 1 pint	33	29	40	13	28
1 1/2 - 2 pints	30	38	39	46	48
2 1/2 - 3 pints	16	15	6	21	9
3 1/2 pints and more	6	6	5	12	9
(N)	(840)	(782)	(426)	(24)	(128)

B. By Sex, All Institutionalized as Alcoholics:

	TORONTO, 1951-62		FLORIDA, 1962-63		BROOKLYN, early 1880's	
	Males	Females	Males	Females	Males	Females
Amount of Drinking* (in rough equivalents on alcoholic content to pints of distilled liquor):						
1/2 pint or less	12%	25%	10%	20%	7%	27%
About 1 pint	31	39	24	40	38	57
1 1/2 - 2 pints	31	27	40	32	42	17
2 1/2 - 3 pints	19	8	18	5	7	0
3 1/2 pints and more	8	1	8	2	6	0
(N)	(625)	(215)	(567)	(215)	(366)	(60)

*The measure of "Amount of Drinking" is for Toronto, "Reported Daily Consumption"; for Florida, "Reported drank per day in past year when drinking"; for Brooklyn, "Maximum Daily Quantity"; and for Copenhagen, "Amount of alcohol consumed daily".

Considering the differences of time, place and circumstances, the distributions in the samples are remarkably alike. As might be expected, the groups with DT's show somewhat higher mean levels of drinking than the total institutionalized alcoholic populations; but in all the samples, well over half the cases are concentrated at the level of one to two pints a day, and very few individuals claim to exceed 3 1/2 pints of whiskey, or its equivalent. These results appear to be in rough consonance with the results of studies of maximum individual alcohol consumption, which have suggested a "quart of 100 proof liquor" as the physiological limit of daily intake over a sustained period for a man of average weight (20).

Perhaps more remarkable than the minority of gargantuan drinkers in Table 2 is the relatively high proportion of the total institutionalized alcoholic populations who fall at the bottom of the distribution, reporting a daily consumption of around six drinks or less. At least from Table 2, it appears that there is a surprisingly large group of labeled alcoholics whose drinking patterns do not differ from those of a substantial proportion of the general population. By this result, an amount of drinking low enough to "catch" all those labeled as alcoholics would not be of much practical use as a screening device, since it would also "catch" too many others. Table 2 suggests, nevertheless, that at least 80% of labeled alcoholics--and particularly of the labeled males--would be "caught" by using the regular drinking of a pint or more as a screening item.

In this discussion we have accepted at face value the results of Table 2, which are presumably based on the alcoholic's response at admission to a general question on daily consumption. Since the literature contains references to the "alcoholic's common pattern of minimizing the amount of alcohol he consumes" (8, p. 314), however, it may well be objected that those in the lowest amount of drinking category are simply lying. But the literature also contains references to a common pattern of overestimating of previous amounts of drinking by those already labeled, and thus with a stake in demonstrating they have improved. The intake interview occurs at the end of the labeling process, when there would seem

to be no longer any compelling reason for the alcoholic to lie about his past behavior to himself or others. And there is no obvious reason why female alcoholics should be two or three times as likely to lie as male alcoholics, as would be required for all reports of low drinking quantity to be falsifications.

In spite of these arguments, it remains true that our knowledge of the methodology of the studies is sketchy at best: for instance, it is possible that a few Toronto respondents, in estimating their daily consumption, averaged drinking with abstaining days, rather than referring only to drinking days. In order to gather some evidence on the validity of Table 2's results, and to test the usefulness of amounts of drinking as possible screening items, it seemed worthwhile to gather some fresh data on extremely heavy drinking in institutionalized alcoholics and the general population.

III. EXTREME DRINKING QUANTITIES IN ALCOHOLICS AND A COMPARISON GROUP

As a pilot study of these questions, completed one-page questionnaires on lifetime very heavy drinking experiences were obtained from 69 male patients in a Veterans Administration hospital with a diagnosis of alcoholism.[5] As a comparison group, 184 general-population males filled out the same questionnaire. About two-thirds of the comparison group were blue-collar workers, mostly union members and leaders; the remainder were primarily professionals, with some clerical workers. This group is of course not representative of the general male population, but is not particularly likely to have a smaller proportion of heavy drinkers than the general male population. The diagnosed alcoholics, as is usual in such samples, were predominantly middle-aged--64% of the alcoholics, as against 33% of the comparison group were in their forties--but since results for the items used in this analysis did not change appreciably when age-matched subgroups were used, the full-sample data is used here. The VA sample reported maximum amounts

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[5] The data used in this section were collected at the instigation of Genevieve Knupfer, M.D. Thanks are due to George Krieger, M.D., Veterans Administration Hospital, Palo Alto, California, for providing the data from the diagnosed alcoholics.

primarily for distilled and for beer and distilled: 77% reported for liquor, 55% for beer, and 9% for only wine.

The distribution of responses from these groups in terms of lifetime frequencies of drinking a fifth of liquor (4/5 U.S. quart) or its equivalent, are shown in Table 3. The data for the Veterans Administration hospital sample are not, of course, directly comparable with Table 2; but if we suppose that the recurrence of a behavior 100 or more times constitutes a regular pattern, the proportion of the VA hospital sample regularly drinking a fifth is in the same range as proportions of Toronto, Florida, and Brooklyn males regularly drinking the same amount. The proportion of the VA hospital sample regularly drinking a pint or more at least 100 times, however, seems rather lower than the comparable figures from Toronto, Florida, and Brooklyn.

In comparing the results from the VA hospital sample with those from the general sample in Table 3, it is apparent that the differences in amount of drinking, whichever the indicator and whatever the cutting-point, are extremely unlikely to be due to chance. But this result is neither unexpected nor enlightening: particularly if we are contemplating using amount of drinking as an indicator of labeled or labelable alcoholism, it is rather the size of the differences, and the existence of deviant cases, which must interest us.

Table 3's figures confirm that all but a small minority of labeled alcoholics have drunk a pint of liquor or equivalent at least a few times in their lives, and that over half have drunk it regularly. Having drunk a pint more than once in one's life, then, could be used as a rough screening indicator for alcoholism with considerable confidence that very few labeled alcoholics would not be caught. Nevertheless, such an indicator, used alone, would seem to be of dubious utility, since the results with the general sample suggest that up to two-thirds of the rest of the male population would also be "caught" by it.

At the upper levels of amount of drinking, lifetime intake shows considerably more discriminating power. The proportion claiming to have drunk a

Table 3.--Extreme Drinking Quantities and Self-Acknowledgement of Alcoholism: Diagnosed Alcoholics and a Comparison Group (males only)

	(VA Hospital) DIAGNOSED ALCOHOLICS			COMPARISON GROUP		
	Total	Am or was Alcoholic	Never Alcoholic	Total	Am or was Alcoholic	Never Alcoholic
A. Number of times has ever drunk at least a fifth of liquor (or equivalent):						
At least 100 different days	42%	52%	22%	13%	45%	11%
At least 10 times, but less than 100 times	30	28	35	15	36	14
More than once, but less than 10 times	14	13	17	20	18	20
Only once	1	0	4	13	0	14
Never	12	7	22	38	0	41
(N)	(69)	(46)	(23)	(175)	(11)	(164)
B. Number of times has ever drunk at least a pint of liquor (or equivalent):						
At least 100 times	52%	63%	30%	21%	73%	18%
10-198 times	29	30	26	21	18	21
2-18 times	14	7	30	23	9	24
Once or twice	0	0	0	11	0	11
Never	4	0	13	23	0	25
(N)	(69)	(46)	(23)	(179)	(11)	(168)

Part A is based on responses from the following question: "About how many different days (or different 24-hour periods) in your life were there when you drank at least a fifth of whiskey or gin, or when you drank at least 16 pints of beer, or about 5 pints of wine, or when you drank some combination or mixture that adds up to that much alcohol? PLEASE CHECK THE ONE ANSWER THAT COMES CLOSEST."

Part B is based on a combination of responses to the foregoing question and the following one: "About how many different days in your life were there when you drank at least a pint but less than a fifth of whiskey or gin, or when you drank 8 to 15 pints of beer, or when you drank 3-5 pints of wine? PLEASE CHECK ONE ANSWER." It will be noted that the categories on frequency of drinking the specified amount are not and cannot be made mutually exclusive.

fifth or equivalent a hundred times or more is three times as great in the VA hospital sample as in the general sample, and the ratio rises to nearly five to one if we compare self-acknowledged alcoholics in the VA hospital sample with the non-alcoholics in the general sample. As we might expect, then, the highest level of drinking inquired about produced the richest mixture in terms of the proportion of labeled and self-acknowledged alcoholics among those it identifies. Nevertheless, this level includes only 42 per cent of the labeled alcoholics; of the possible cutting-points in Table 3, the lifetime intake level which seems to hold the most promise as an all-purpose screening item is having drunk a fifth ten or more times--this level identifies nearly three-quarters of the labeled alcoholics, while providing the greatest discrimination, in terms of percentage differences, between the two samples.

Table 3 also shows that much of the variance on amount of drinking between the VA hospital sample and the general sample is apparently "explained" by the simple and direct item, "do you think you are an alcoholic? (If not:) Do you think that you used to be an alcoholic?" This result must, of course, be interpreted with caution, in view of the small numbers, and of the emphasis in the literature on prevarication among alcoholics. Nevertheless, that self-acknowledged alcoholics in the general sample behave on amount of drinking so much like the VA sample self-acknowledged alcoholics, and that unacknowledging members of the VA sample behave so much like the unacknowledging members of the general sample, suggest both the possible utility of the point-blank question for screening purposes, and the desirability of looking into what the "deviant cases"--the labeled alcoholics who do not acknowledge that status, and/or who do not drink very much--may reveal to us about the nature of the processes of becoming and being labeled an alcoholic.

From the data at hand, there is no way of settling the question of whether the unacknowledging and light-drinking members of the VA sample are victims of mislabeling or are merely consistent liars. At least, however, Table 3 provides

some evidence that the existence of labeled alcoholics who report drinking less than a substantial proportion of the general population is unlikely to be totally a result of prevarication by alcoholic respondents: thus those who admit that they are or were alcoholics do not seem likely to lie about lifetime intake, and yet, for example, only 63 per cent of a group of self-acknowledged alcoholics report drinking a pint often enough (100 or more times) for it ever to have been a regular occurrence.

IV. DRINKING IN GENERAL-POPULATION "CRITERION GROUPS"

While, as we have seen, it appears to be possible to become institutionalized as an alcoholic without ever drinking very much, there is no doubt that such persons are very definitely a minority in the institutionalized samples of Tables 2 and 3. And a comparison of these distributions with those in Table 1 leaves no doubt that, at least on the crucial dimension of amount of drinking, what have been taken as "criterion groups" of alcoholics in general-population surveys do not behave in at all the same way as institutionalized alcoholics. This finding does not necessarily invalidate the use of the groups in Table 1 as criterion groups, but it does suggest that the items used to define the groups are not efficient in finding individuals who behave like labeled alcoholics.

Plausible explanations can be offered for the unexpected distributions on amount of drinking of the criterion groups in Table 1. In the first place, Table 1 reveals that the commonly-used "QF" series of questions, and the related "F/Q" series in the San Francisco study, seem, in spite of their greater detail, to yield lower distributions on amount of drinking for these "criterion groups" than the simpler "most in the last year" series. It may be that the timidity that has constrained most researchers in the past from asking general samples about large amounts of drinking only results in a good deal of fudging by respondents who do not want to place themselves at the end of the scale in an amount of drinking.

In the second place, the Social Troubles indicators used in part B of Table 1 have been based on lifetime prevalence, while amount of drinking is based on a one-year period, so that each of the criterion groups in B is likely to contain a considerable proportion whose social troubles and heavy drinking both occurred years ago. Somewhat surprisingly, however, limiting the San Francisco criterion group to those with current social troubles at the same level did not produce results very different from Table 1's: while 98% reported drinking 4 or more drinks on an occasion in the last year, only 67% reported drinking 8 or more (N=66).

In the third place, and most importantly, there is serious question whether the indicators used to define the criterion groups are sufficiently selective to "catch" only the kind of "problem drinker" or "alcoholic" they have been assumed to identify. Speculation about any peculiarities in the domiciliary identified "alcoholics" samples of part A of Table 1 is idle without further information on the implications of the procedures used to select them. At least for the samples of part B and C, however, it can be argued that the particular indicators used will include in the "criterion group" some persons with rather minor and non-recurring involvements with alcohol.[6]

The question remains, can a general-population criterion-group be defined which behaves on amount of drinking like the institutionalized alcoholics samples presented in Tables 2 and 3 above? As, again, a preliminary investigation of this, Table 4 shows figures on relatively heavy amounts of drinking for groups with social troubles in the same time-period as the drinking, defined by criteria of varying severity. The "Least Severely" defined group is that which was used in Table 1; as in Table 1, its distribution on amount of drinking, whether for current or for lifetime troubles and drinking, is not at all commensurate with the distributions of institutionalized samples. With more severe

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[6] See Robin Room, "Notes on 'Identifying Problem Drinkers' . . .," cit. supra.

Table 4.--Amount of Drinking in San Francisco Study:
The Effect of Varying the Severity of the Social Troubles Criterion
(Percentaged where base is over 10)

	CRITERION GROUPS DEFINED BY SOCIAL TROUBLES:						RESIDUAL GROUP: All drinkers without Social Troubles	
	Most Severely		Severely		Least Severely			
	Male	Female	Male	Female	Male	Female	Male	Female
A. CURRENT PROBLEMS; CURRENT DRINKING:								
drinks weekly +, usually > ½ pint	(7)	(1)	48%	(2)	28%	36%	2%	2%
drinks monthly +, usually > ½ pint	(7)	(1)	67%	(2)	49%	50%	10%	4%
more than 1 pint at least once in the last year	(7)	(1)	62%	(3)	49%	21%	13%	2%
(N)	(8)	(1)	(27)	(6)	(57)	(14)	(291)	(454)
B. EVER PROBLEMS; EVER DRINKING:								
drank weekly +, usually ≥½ pint	94%	(1)	66%	40%	52%	52%	14%	7%
drank monthly +, usually ≥½ pint	94%	(1)	75%	47%	62%	56%	25%	11%
(N)	(17)	(1)	(56)	(15)	(104)	(27)	(277)	(521)

Data from the Drinking Practices Study weighted representative sample of San Francisco adults (1964). Bases in the last two columns are: for part A, those of the 346 men and 612 women without even "least severely" defined Current Social Troubles who are also current drinkers; for part B, those of the 299 men and 599 women without even "least severely" defined Ever Social Troubles who also were ever drinkers.

"1/2 pint" is taken as the liquor-equivalent of 6 or 7 drinks of any beverage. "1 pint" is taken as the liquor-equivalent of 12 drinks of any beverage.

The Most Severely defined groups are those with a Social Troubles Score equivalent to: severe problems in two areas and mild in one; or moderate problems in all five areas, etc. The Severely defined groups have scores equivalent to: one severe problem; or one moderate and one mild, etc. The Least Severely defined groups have scores equivalent to: two mild; or one moderate problem.

Note that of the dimensions included in this table, only Sex has mutually exclusive categories. See footnote 7 in text.

criteria, however, the proportion with high amounts of drinking becomes much higher, until for the tiny minority with the "Most Severely" defined troubles (1% of the sample for "Current Troubles," 2% for "Ever Troubles"), the distribution on amount of drinking seems very similar to those of the institutionalized samples in Tables 2 and 3.[7]

So the answer to the question of whether a criterion group can be defined in a general-population sample which behaves on amount of drinking like an institutionalized sample is, Yes, but it seems that it will be a tiny minority of the general population sample--so tiny that an epidemiological survey wishing to identify such a group in useful numbers would need to include at least 10,000 members of the general population.

On its face, this tentative finding is not very startling: to identify those with just about any chronic condition in current full-blown form, a very large general-population sample is needed. But the finding might well serve to warn against the easy equation of those with any troubles due to drinking in their history (which includes a substantial proportion of the population) with the "ideal-type" of alcoholic which has been described so often from studies of the institutionalized population.

V. CONCLUSION

As has been stressed throughout this paper, the results of our explorations into the relationship between amount of drinking and alcoholism are best treated not as conclusive, but as suggestive of directions for further research. We need more information, with a better general sample, on lifetime and current

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[7] It should be noted that many of the groups and indicators in Table 4 are cumulative; the "Most Severely" defined Social Troubles group for each time period is included in the "Severely" defined group, which in turn is included in the "Least Severely" defined group; current troubles are included in ever troubles and current amount of drinking in ever amount of drinking; "drinks weekly +, usually >½ pint" is included in "drinks monthly +, usually >½ pint."

prevalences of extreme amounts of drinking in the population at large--amounts much larger than household surveys have yet dared to ask their respondents about. We need to establish with better reliability if it is possible to define with a household survey a criterion group which behaves--drinks--like institutionalized alcoholics. And we need to know much more about the conditions under which relatively moderate drinkers, particularly when in vulnerable social categories, are labeled and institutionalized as alcoholics with some regularity.

All these questions, of course, are directly pertinent to the particular relationship investigated in the current paper. More generally, however, it is time that we turn from assuming to investigating the correspondence between individual behavior with respect to alcohol, the social consequences of individual behavior, and the processes by which an individual may become labeled as alcoholic.

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