Alcohol Studies and Science: Trapped in the Velvet Cage of Medical Research? An Editorial

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ABSTRACT. Objective: This article offers the author's assessment of the progress in research on alcohol related to alcohol misuse and alcohol use disorders. **Method:** The historical background of alcohol-problem research is reviewed in the context of defining problems for study and the pattern by which research is funded. **Results:** Progress in terms of cumulative research has been affected by the lack of central authority and the National Institutes of Health structure within which almost all funding for alcohol research in the United States has occurred. Problems are traced to the particular history and nature of alcohol-problem research, the continuing prominence of moral elements, and particular features of the treatment of alcohol use disorders. **Conclusions:** Although the scope of activity and production of publications in alcohol research has expanded greatly during the past 75 years, there is a potential shortfall in the cumulative research that has led to solutions to major problems associated with alcohol. (*J. Stud. Alcohol Drugs, Supplement 17,* 125–132, 2014)

THE SUMMARIES OF RESEARCH PROGRESS presented elsewhere in this 75th anniversary issue document promising findings across specialized studies using multiple lenses through which to understand human use of beverage alcohol. While recognizing the achievements embedded in this scholarship, this article focuses on the limited production over 75 years of cumulative knowledge critical to effective treatment of alcohol use disorders (AUDs). The conclusion is based on the slenderness of evidence in sources such as Cochrane Reviews. This suggests several organizational and environmental forces that discouraged cumulative science in alcohol studies and instead supported the dispersion of research resources across a continually growing number of topics. The medical model of research direction and support may be a questionable fit with foci that include both health conditions (AUDs) and behaviors reflected in deviations from socially constructed norms and laws.

The following example captures the stated concern: Substantial funding for alcohol research has been available in the United States since 1971 (Midanik, 2006) through the establishment of the National Institute on Alcohol Abuse and Alcoholism (NIAAA). Improving the quality of treatment for AUDs is an important goal for alcohol research. The medication naltrexone has demonstrated effectiveness in the treatment of AUDs, essentially acting to block pleasure associated with drinking. Developed in 1963, naltrexone was discovered to have important blocking effects on opioid receptors through animal studies in the 1980s. Significant results in AUD treatment were reported and replicated before 1990 (O'Malley et al., 1992). Naltrexone's approval by the U.S. Food and Drug Administration (FDA) for AUD treatment occurred 20 years ago, in 1994. Its patent has expired, and in generic form it is available at a modest price. An extended-effect injection technology (trade name: Vivitrol) that effectively addresses oral medication compliance problems was approved by the FDA in 2006.

Nonetheless, although multiple studies have been conducted, there is yet no conclusive evidence from controlled trials of naltrexone across multiple target populations in either of its modalities regarding (a) specific target populations where the greatest impact can be expected, (b) appropriate duration of treatment (within any subpopulation), (c) the content of or active ingredients within supportive psychosocial interventions with which the drug's administration is most effectively combined, (d) appropriate long-term aftercare, (e) cost-effectiveness relative to other treatments, or (f) methods of disseminating information about naltrexone therapies to primary care physicians.

The absence of such data is even more marked with another effective medication, acamprosate. Data based on randomized clinical trials are also incomplete to guide clinician selection and use of psychosocial interventions, such as motivational interventions, and effective combinations of psychosocial and medication-assisted therapies, including 12-step-based modalities that are known to be used in the vast majority of programs. In spite of the weakness of these databases, trumpeting about "evidence-based practices" dominates and persists despite the front-line lack of research-based guidance for clinicians' choice of treatment strategies (McGovern and Carroll, 2003; Manuel et al., 2011).

Research on naltrexone serves as a crucial example to highlight the dilemmas of progress in American alcohol research, especially during the last 45 years. The example is repeated for the lack of conclusive knowledge about topics

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vital to successful treatment, such as methods used to retain people in therapy, content of brief counseling in approaching alcohol issues in primary care, or motivating physicians' commitment to providing brief interventions for alcohol issues revealed in primary care. The value associated with conclusive answers to each of these research questions is well recognized, yet there are no distinctively sustained, cumulative, and cross-institutional research programs to obtain such answers to any of them. In addition to these gaps, it is impossible to easily identify the central issues in alcohol research, to find mechanisms signaling significant "breakthroughs," or to find codifications of significant findings from disparate locations across the nation, to say nothing of integrated summaries of findings from around the world.

Research on alcohol issues is scattered and diffuse, driven by varied interests and agendas representing its vulnerability to influence from a complex external organizational environment, with the result of inconclusive bodies of evidence about a vast array of different research questions. There is no center of authoritative interest in identifying what is being found in this mass of research and data. These problems center this article's critique of the organization of alcohol research and its funding, structured on science-driven and medical assumptions.

Key to the issues that are outlined is reliance on an assumed authority embedded within the design of research support within the National Institutes of Health (NIH) and assumed guidance by the norms of science on pathways toward evidence that will maximize the effectiveness of interventions. This process does not operate effectively in the current organizational context of research on alcohol issues. This process is the basis for research funding for other medical disorders where there is high consensus on the nature of the disorder, its parameters, and the evidence of treatment success. These bases of consensus are crucial drivers for building cumulative research that are significantly lacking in the alcohol research specialty.

It may be important to note that this critique centers on studies of "alcohol problems" and AUDs, excluding research on the actions of ethanol per se and that that uses ethanol as a platform for pursuing topics other than humans' problematic use of the substance.

Since 1970, geometric growth in funding has allowed for research studies of varying scope and size, but all of which, as a requirement of their funding, are conducted within complex organizational structures. Both large-scale alcohol-problem research and organizationally embedded science are relatively new endeavors. Although scientific principles remain constant, the research process, beginning with its conceptualization, is transformed by organizational phenomena at multiple levels. These include internal and external environmental influence involving political power, financial investment, entrepreneurship, and individuals' careers and accumulation of personal capital (Colyvas and Powell, 2006; Galison and Hevly, 1994; Singer, 1986). These features of the macro-organizational context directly affect how research sustains focus and pursues cumulation.

Has alcohol research significantly affected AUDs? Data indicate that more than 7.4 million Americans have untreated alcohol problems (Substance Abuse and Mental Health Services Administration, 2012). Likely demonstrating both lack of consensus between researchers and the public as well as public resistance to utilizing treatment, only 1.2% of those defined by alcohol epidemiologists to need treatment regard themselves as in need of treatment. Other data show that despite attempts to intervene with and treat alcohol problems and AUDs, the American economy experiences a $225 billion annual loss stemming from alcohol-related problems (Bouchery et al., 2011). These two pieces of evidence indicate that if the goal of research over the 45 years since the founding of NIAAA and the 75 years since the founding of this journal was effective treatment and intervention, it has not succeeded. However, it is ironic that such a conclusion is complicated by the absence of a baseline for comparison. Seventy-five years ago, there was little alcohol research as well as little interest in alcohol problems, in what has been characterized as a post-Prohibition relief from moralistic harangues about alcohol (Roizen, 1991). With the emergence of the Yale Center of Alcohol Studies, the research specialty began its progression toward institutionalization and toward becoming an organizational complex, seeking resources for growth and sustainability (Pfeffer and Salancik, 1978).

Core of research

The symbolic center of alcohol research at Yale, which gained traction through the 1940s and 1950s, moved in the 1960s to the National Council on Alcoholism and then in 1970 to NIAAA, notable for its infusion of resources into what was then a tiny alcohol research specialty (Beauchamp, 1980; Wiener, 1981). NIAAA's multiple functions embedded a mandate that covered supporting services in the states, treatment service development, and research. For better or worse, this cast NIAAA into a national leadership role for nearly all alcohol issues other than those dealing with the manufacture and distribution of alcohol. With all this activity "under one roof," substantial complementarity between research and practice might have been expected, but this has never been documented. This central leadership role faded with the removal of all but NIAAA's research authorities in 1982, moving the other functions to a separate agency. With its transition into the NIH in 1992, NIAAA's national leadership role of the 1970s and 1980s effectively disappeared.

Assuming greater influence of treatment concerns on the direction of research when NIAAA was in an omnibus role, the move into NIH shifted the guidance of alcohol research to NIH's laissez-faire assumptions that a minimally guided process of support will lead toward increasing evidence sup-

porting effective treatment. As mentioned, such assumptions seem to work well when the research specialty has consensus about what it is studying and the treatment outcomes that are sought. With variation across institutes, NIH's units have the mandate of treating and curing diseases in the most effective and efficient way possible. Further, if allowed to function freely, these applications of science are assumed to progressively produce and separate truths in a manner prioritized by their relative impact in treating these respective diseases, hence the lack of need for central direction.

The features of the problematic fit of these assumptions with alcohol research have been well documented in other contexts (Alexander, 2008; Fingarette, 1989; Heyman, 2010). NIAAA's "disease" is not only unclearly defined and repeatedly challenged, but it is on a continuum with normal and socially desired behaviors involving alcohol use.

At the core of research on AUDs is the 19th century vision that if drinking causes troubles, and drinking is a voluntary act, troubles will end by stopping drinking. Such a proposition animated collective action that led to National Prohibition. This vision remains the principal solution to AUDs today, although prohibition is imposed and enforced in a different manner than evolved from the Volstead Act. Specifically, persons who repeatedly misuse alcohol in a way that is perceived to harm others or themselves (cause trouble) and who do not respond to repeated social sanctions are required (prohibition) to remain abstinent from alcohol use indefinitely. As the illegal speakeasy defined the failure of Prohibition, posttreatment drinking among those treated for AUDs defines the failure of treatment. There is marked commonality between the rigidity with which yesterday's temperance workers and today's specialists in AUDs emphasize their "no alcohol" remedies. However, the issue of which drinkers should stop drinking and when has accumulated substantial ambiguity.

Since the early 1940s, "mainstreaming" the issues of "alcoholism" (uncontrolled drinking) alongside other health problems was the sought-after institutional structure for research and practice for both "recovered" and other activists seeking de-stigmatization and respectability for themselves and their peers. The system that has evolved is invested in particular models of research and practice and has self-driving sustainability through an interconnected web of vested interests and constituencies. But at the same time the issues have grown far beyond fair treatment of the "alcoholic." With this institutional expansion, alcohol research may be trapped in a model for research progress within which it cannot succeed.

Seven assumptions are posited as foundational for the NIH manner of guiding research. First is consensus on the nature of the problem as the fundamental driver of all other activities. Second is jurisdiction of control exclusive to medical professionals and allied scientists for how treatment is designed and outcomes are evaluated. Third is unambiguous societal support for the endeavor, represented in voluntary nonprofessional groups generated from among the public that add resources to support research and practice in both practical and symbolic terms. Fourth is a clear-cut population of those afflicted who (together with their social stakeholders) consensually and constantly desire and actively seek improved treatment. Fifth, reflecting the prior assumption, service providers are assumed to be equally enthusiastic and vigilant in their search for improved treatment technology. Sixth, research and practice are assumed to be free of interference from nonprofessionals and from agencies of social control, particularly the legal system. Finally, and related to the prior assumption, within these institutional structures there is no possibility of threatening, bargaining, or coercing individuals to receive treatments and services that they do not desire.

For medical problems in categories other than alcohol issues, research is driven by relatively few goals, centered on discovery and possible elimination of etiological vectors, on earlier identification of disease symptoms, and on increasingly effective treatments, the results of which are sustainable. Because alcohol issues are deeply and intractably embedded in multiple social structures, the agenda for alcohol research studies includes these goals but in a much less specific fashion; yet this agenda also extends far beyond these straightforward ideas.

A pivotal example distinguishing alcohol issues from other health problems is how AUDs are defined in terms of treatment needs and the resulting research questions for which funding is sought. The AUD treatment paradigm is substantially discrepant from that associated with NIH's other categorical disorders. The most important discrepancy is the relatively low involvement of physicians and other medical practitioners in AUD treatment. In addition, physicians are not necessarily supportive of AUD treatment (Cabana et al., 1999; Lindberg et al., 2006).

But a discrepancy of equal or greater importance is the "wraparound" or "comprehensive care" paradigm. AUD treatment specialists have widely adopted a diagnostic tool called the Addiction Severity Index that embeds a conceptual leap away from traditional conceptions of medical care (McLellan et al., 1992). The Addiction Severity Index not only measures the extent to which the patient is dealing with an AUD but also provides quantitative assessments of "total life" functioning: family, medical, psychological, legal and job problems, and others such as housing, dental, and educational problems. The consensus among AUD treatment specialists is that AUD treatment will be notably enhanced if these other problems are addressed (Edwards et al., 2011). Such an approach to medical care, laudable as it may be, is essentially an open-ended definition of care that, in a laissez-faire research funding environment, is going to lead to a scattering of research efforts and results well outside a simple sequential scientific model.

Normative drivers of research

A major element in the scattering of alcohol research is the assigned role of NIAAA for research supporting identification and control of "problem drinkers," the "alcohol abuse" part of its name. The decade following the Repeal of Prohibition included the invention or rediscovery of "alcoholism" as the singular focus for research and action (Levine, 1978; Roizen, 2004) until the invention of the "problem drinker" 30 years later. This is a "functioning" individual whose role performance is significantly impaired in different ways by drinking (Cahalan, 1970). Role performance impairment signals that one or more other parties are offended by the observed behaviors and have adequate social power to act against them. Whereas the alcoholism focus called for institutional links with medicine, the "problem drinker" (who did not necessarily have a health problem) revived the public health framework of the Temperance Movement, essentially dormant since the 1930s, re-creating earlier links of alcohol issues to the criminal justice system as well as less official systems of discipline. These include issues emanating from various interest groups and bearing emotional charges such as underage drinking; "binge" (i.e., heavy episodic) drinking among college students; violence "caused" by drinking; drinking in association with driving; and, among women, drinking while pregnant. NIAAA's mandate legitimizes inclusion of these nondiseased categories in funded research, moving completely away from the previously mentioned assumptions allowing for the laissez-faire guidance of NIH research.

Context of research funding

U.S. alcohol research is inextricably bound to the NIH. Nearly all alcohol research proposals go through the NIAAA review process. As mentioned, the NIH structure assumes that the advancement of science will repeatedly create and renew its own priorities and that important discoveries will impel further important discoveries. Because the assumptions associated with other diseases do not fit alcohol studies, and because of the inclusion of the array of nondisease norm-breaking and law-breaking categories of alcohol problems, this laissez-faire structure fosters further opportunities for fragmentation.

NIH's research paradigm follows a series of defined building blocks (exploratory work advancing to extensive studies, periods of grant funding from 1 to 5 years) in which investigator-initiated applications are dominant, a key element in the "science-as-driver" model. Adequate "scores" from review committees are necessary but not sufficient for an application's funding. Awards among those scored applications follow enigmatic secret decisions by NIH personnel. The pool of reviewers of applications is also chosen in secret by NIH personnel. An applicant can learn of the pool from which the reviewers were drawn but cannot identify them specifically. This secret choice by NIH personnel may or may not link an application with reviewers who are maximally competent and objective. Enthusiasm of at least one assigned reviewer is crucial for an application's fate. Very rarely, the absence of such enthusiasm among the assigned reviewers can be superseded by an unassigned reviewer who has independently studied the application and convinces other committee members to act favorably on the application. Thus, to begin a funding career, an applicant's work almost always must have notable substance and promise, although many unfunded applications have these features.

Once a funding career is launched, strategic decisions are crucial. Given that most of the work considered here is behavioral science, the likelihood of "blockbuster" findings during a particular period of funding is not high. This does not mean that the work should not be pursued further. Strategically, however, that may not be the best course to follow in alcohol studies. At the same time, this likely means that promising lines of scientific pursuit will be dropped.

Unless a scientist elects to continue a completed grant through a "competing renewal," the quality and achievements of his prior work funded by NIH can only be judged by reviewing the biosketch that accompanies a new application. That peers who would serve on review committees would otherwise "know" the substance of achievements from prior funding is unlikely because they should be chosen to assure professional distance from the applicant. In examining new grant applications, reviewers generally have minimal information about the specific products of prior NIH funding unless they choose to undertake independent searches.

Thus, cumulative performance of applicants is difficult to evaluate, suggesting strategic value to submitting new rather than renewal applications. Other than evaluating competing renewal proposals where funded achievements must be documented, there are few readily available bases for reviewers' evaluation of patterns of cumulative science. These details are crucial when scientific work is widely scattered across many research questions, as in NIH-supported alcohol studies. In other areas of science where research questions are tightly focused, the state of knowledge and contributors to it are much more readily established and thus a clearly better fit with the intentions of NIH procedures.

A similar lack of fit between alcohol research and NIH procedures is in the latter's recent emphasis on innovation. In response to repeated criticism that NIH primarily funds "within the paradigms" and supports only established methodologies, the agency rather bluntly introduced "innovation" as one of five key criteria for evaluating proposals (NIH, n.d.). The extent to which this might undermine the replication necessary for cumulative science does not appear

to have been considered. Otherwise, in a tightly focused research arena, this emphasis seems directed toward "new ways to approach tough problems"; within the reviewing environment, it also can be interpreted as "old ways to approach new problems." For a field such as alcohol studies, this suggests an added driver toward diversification and fragmentation in a specialty without leadership in defining key issues. It suggests that those who dedicate themselves to replication will not find themselves becoming stars.

If one wants to continue a research career, one cannot leave this system unless perhaps there is commercial interest in the potential products that would attract proprietary funding. As is true in all of medical research, but an exacerbating factor in alcohol research, a substantial proportion if not a majority of alcohol researchers are likely without tenure-track positions in academic settings. This certainly holds true for nearly all of the support staff that comprise a research team. Thus, continuing research grant support requires rapid publication for renewal or new funding, driven by the NIH funding timetable.

Publication of alcohol-related research studies

For decades, the journal that is now the *Journal of Studies on Alcohol and Drugs* was the only U.S. outlet devoted to alcohol studies. The "explosion" in publication outlets for alcohol-related research seems a hallmark of progress and success, but in actuality it is an engine for further fragmentation as well as encouragement of greater subspecialization of research topics that are in turn presented to NIH to compete for funding. Today there are at least 60 research journals focused on AUDs and substance use disorders (SUDs) published in English (Babor et al., 2008). Setting a conservative midpoint at 150 manuscripts per year yields an annual output of 9,000 manuscripts or 45,000 manuscripts over a 5-year period. This rough census does not include an unknown number of web-based electronic journals that are in the process of formation or studies in books or proceedings. Further, a complete estimate of alcohol-related publications requires inclusion of the many other nonspecialty outlets, which could add thousands to these numbers.

What are the implications of this greatly expanded scope of published alcohol research? Can it be assumed that nothing appears in print unless it meets strict standards of science? Common examples where standards might be applied are representativeness of samples, validation of measurements, missing data, and proper application of statistical techniques. As any editorial board member or volunteer journal reviewer knows, these standards are flexible, even indefinable. Work that is remarkably inconclusive appears in print. Meta-analyses' listings of articles that do and do not meet their exclusion criteria repeatedly confirm this assertion.

Editors-in-chief of these many journals must sustain a respectable "impact factor" to maintain a flow of support funds from a publisher and also attract subscriptions to support publication. Having a backlog of publishable manuscripts is essential to produce timely journal issues. Skipping an issue while waiting for the accumulation of solid manuscripts is not feasible. Manuscripts of varying quality are accepted for publication, with deficiencies sometimes revealed in meta-analyses. Very rarely have AUD- or SUD-related journals ceased publication because of failure to attract manuscripts.

Documenting the range of what is published

A further issue with alcohol research findings is their accessibility and integration. A possible means of "sorting out" those courses of research that are productive and cumulating is the disciplined literature review. Essential for such reviews are well-documented and accessible databases of published literature. Rather than increasing these opportunities, the alcohol research specialty has moved in the opposite direction.

PubMed provides limited access for all medically related research publications, but its specific value for alcohol research has been challenged by documentation experts (Mitchell et al., 2012). Facilities to "keep up" with new information about alcohol issues were provided very early but then oddly disappeared. Creating order across this mass of published information was anticipated in 1939 by the Research Society on Problems of Alcohol. Their abstracting project was taken on by the fledgling scientific group at Yale and became the Classified Abstract Archive of the Alcohol Literature (CAAAL). Led by a self-trained expert in scientific documentation—Mark Keller—CAAAL was, in the retrospective light of technology available now, an amazing project that captured the content of the world's scientific literature and included a mechanical device that facilitated in-depth literature reviews through keyword searching. NIAAA provided substantial support for CAAAL from the early 1970s until 1977, partly because NIAAA launched a complementary database (to become ETOH) in 1972. Because of increasing electronic automation, the CAAAL system became obsolete, and the documentation process ended at the Center of Alcohol Studies as an NIAAA contract for the service was won by a commercial vendor. This new repository, which carried with it the data from CAAAL, evolved into ETOH, which was on the Internet by 1997, but NIAAA support for the addition of new material ceased in 2003, apparently because of an assumed duplication by PubMed.

Although little is now published that cannot be found via the Internet, the loss of ETOH was lamented because of the particular manner in which data and abstracts were organized; that the semipublished "gray literature" was included; and that, by definition, searches were restricted to alcohol, a fact not true of PubMed and similar resources

where searches can yield a great deal of extraneous information (Mitchell et al., 2012).

Documenting what is known

The individual meta-analysis is a partial substitute for more a comprehensive literature review and has been widely used yet not systematically supported as a means to integrate the findings of alcohol research. In more highly organized areas of science, ongoing integration of findings is expected as part of the process of cumulative science, not as an optional or specialized activity. Because meta-analyses in alcohol research are investigator-initiated for the most part, the coverage is inconsistent. Further, conclusions of a meta-analysis become locked in time as soon as it is completed. This device has greatest promise were it to be used according to a plan, where the focus is not constricted by journals' arbitrary space limitations, and where updating is afforded as part of the process. Meta-analysis does not replace integrative reviews of published literature, although the assumption that this is the case seems to be growing. Excellent reviews occasionally appear, but they are not supported or produced in any systematic manner.

For consensual authority, one must turn to a different type of publication, reviews of evidence that cover a broad range of medical specialties and that follow clear rules in reaching conclusions. The Cochrane Collaborative epitomizes this strategy, generally limiting its analyses to randomized controlled trials that meet predetermined standards and which in format follow systematic steps of presentation. If this mechanism is used as a criterion for progress in alcohol research, the conclusions are not encouraging and support the assertions made in this review.

Recent publication of a summary of the 18 published Cochrane Reviews (Abraha and Cusi, 2012) on alcohol-related interventions includes 41 drug-related reviews, many of which have implications for alcohol-related interventions, but the reviews do not suggest that application. This volume considers only the topics of prevention and treatment of AUDs. Nonetheless, these topics are the ones of central interest to the funders of alcohol-related research as well as to the general public. The data definitely demonstrate that there are interventions that are effective, but the missing elements are disappointing. Sampling the contents reveals the following:

- Screening, brief intervention, and referral to treatment (SBIRT), a topic of a seemingly huge research investment, still is inconclusive with regard to its application to women, youths, and minorities. The active ingredients of the intervention are not yet specified.
- Another extensively studied subject, use of SBIRT among general hospital patients, offers inconclusive evidence because so many different outcome measures are used.
- Alcoholics Anonymous (AA) is found to have equivalent outcomes to other treatments.
- Although school-based prevention programs appear promising, the main comments were centered on the poor quality of data. In addition, those programs with single components seem to work as well as those with multiple components.
- "Social norms" programs for college students were found to have modest short-term outcomes.
- Research designs were inadequate to assess benzodiazepine use in detoxification programs.
- Acamprosate and naltrexone were reported as effective, although concerns about study design were prominent, particularly for the latter.

At the outset, this review seems thin, given the investment in treatment- and prevention-related research. It is perhaps unfair to use this report as a yardstick for 75 years of research achievement on prevention and treatment, but other measures are either unavailable or do not have the creditability of Cochrane-based criteria.

One reason for the brevity of the Cochrane publication is that the vast majority of published treatment studies are not replications of hypotheses or techniques in new populations but are extensions, elaborations, and adaptations of particular treatment strategies. Each of these publications makes a unique but very limited contribution. This reflects the expectations of NIH grantees in alcohol studies, as well as the apparent need for each investigator to create his or her own identity with a particular subject matter. Except for their students and laboratory employees, other investigators have no career gains in this specialty from adhering to or pursuing others' methodologies and definitions in replication studies. To say nothing of the barriers to publishing replications, committing energies to replications before establishing a reputation may inhibit the search for a unique identity and prevent the receipt of the essential high marks needed for funding in the "investigator" and "innovation" sections of NIH grant applications.

Discussion

Several further observations are focused on items missing from the collective alcohol research enterprise. First, although the lack of clear-cut and focused research questions seems to be an impediment to a thoroughly replicated set of research findings, the articulation of such questions seems impossible. The current structure of research provides a completely decentralized structure where there could be no "authority" or "core" from which research direction would flow. The organization of research within a medical institutional framework assumes research to be driven by science, treatment provider demands, and patient needs, and to be without outside interference. Unfortunately, these conditions do not fully obtain in alcohol research.

An obvious remedy to this is the establishment of authority that creates priorities and guides alcohol research. Such an authority could likely succeed in gaining support were it appropriately drawn from a balanced mix of scientists and practitioners. This is not a novel idea, having been the initial design for the National Institute on Drug Abuse's Clinical Trials Network (Tai et al., 2010). Creating such an authority out of whole cloth to cover the bulk of public research funding would, however, be daunting, particularly with investment of such value in personal autonomy in deciding the course of one's research.

Second, a related possibility would be institutionalizing substantial numbers of term appointments of "sitting" academics to positions throughout NIAAA, following the pattern adopted by the National Science Foundation, where the established structure provides for faculty members on leave to occupy key leadership and influence positions. Such opportunities might be greatly enhanced by the availability of telecommuting and other distance relationships that would minimize the disruptions of physical moves.

Third, the exclusive dependence of alcohol research on public tax dollars might be seen as ludicrous from one perspective. The choice of the alcohol "movement" via the National Council on Alcoholism to detach from the alcoholic beverage industry (Roizen, 2004) permanently closed a possible source of major research funding that could have allowed for different models of research prioritizing and funding other than those imposed by NIH. Nothing has ever been done to animate the obvious (and outrageous) gap in corporate social responsibility on the part of the alcoholic beverage industry aside from the relatively tiny sums contributed through a few brewers and vintners. The likelihood of serious action in this direction, however, seems precluded by the research specialty's current attitude of deep disdain and paranoia toward these industries, an international perspective that appears firmly institutionalized (Babor, 2009).

Fourth, the lack of any significant voluntary private foundation activity is rather grave in that only the voice of the government (and entrepreneurial treatment providers) speaks for alcohol research and its product (i.e., treatment). The availability of such support could provide flexibility and perhaps opportunity for unorthodox views expressed through research.

Fifth, the criterion of abstinence as the rigid goal of treatment keeps the research specialty as well as the treatment complex tied in the public mind to the singular model of AA. This is what the public expects from treatment, and thus the abstinence outcome is institutionalized. Without substantial normative change, American culture cannot accommodate persons treated for AUDs who continue to use alcohol. This posttreatment social expectation of "cure" is likely the most significant barrier to the specialty accepting the harm reduction model of treatment that governs the rest of the practice of medicine.

Sixth, there is little empirical understanding of "normal" drinking (i.e. drinking that occurs routinely without signs of loss of control) (Bacon, 1943). Unfundable studies include those of alcohol's positive psychological effects or of alcohol use as a transitory solution to personal and social problems. Practically no new research has been supported to build on or ascertain continuing subcultural uniqueness and sustainability in a homogenized culture of normatively controlled routine drinking in ethnic communities (cf. Cook et al., 2013; Glassner and Berg, 1980). Self-involvement in wellness and health promotion is promoted from all quarters, including the Affordable Care Act, yet positive use of alcohol as a self-medication is viewed as pathology, symptomatic of an AUD.

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