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Temperance Culture and the Repression of Scientific Inquiry Into Illegal Drug-Altered States of Consciousness

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American scientific inquiry into the understandings of drug-altered states of consciousness is underdeveloped primarily because government regulations embedded within a temperance culture has repressed it. Despite preliminary evidence of the therapeutic value of altered states of consciousness associated with the use of illegal drugs to both physical and mental health, science has been able to do little to understand this potential. Within this essay, we examine the influence of this temperance culture on government regulations and its impingement on scientific practice in the study of illegal drug-altered states of consciousness as the explanation for much of the failure of science to adequately explore these lines of inquiry. Much of our analysis is based upon examples from research in the area of alcohol studies, as the temperance movement arose primarily in response to this particular drug.

Keywords: Drugs; Altered States of Consciousness; Government Control of Drug Research; Temperance Culture

Despite an almost universal cultural recognition of and quest for drug-altered states of consciousness (DASC) throughout human history, our current scientific knowledge base concerning these altered states remains limited. Unlike our current state, however, scientific effort in the past has provided some valuable understandings of DASC, particularly those induced by illegal drugs. Because science has become society's primary source of "legitimate" knowledge, the role of scientific practice in its more recent limiting of further knowledge warrants attention.

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Throughout human history, all but a few cultures have sanctioned some form of chemical alteration of consciousness. In most current societies, this is reflected in the legal, medically controlled, scientifically legitimated, pharmaceutical marketplace. Within this marketplace, a significant portion of all drug sales are for psychoactive (consciousness altering) drugs used to treat various mental and emotional problems such as depression, anxiety, and numerous mental disorders, as well as for the relief of pain (Leavitt, 2003).

These drugs are seen as therapeutic agents used to make sick individuals healthy (Szasz, 1974), and they are legally and legitimately manufactured, distributed, prescribed, dispensed, and used under medical and state authority. This medical authority, however, operates under various state restrictions governing who can prescribe and dispense them as well as how much of the drug can be dispensed in any given period. Under these restrictions, use of these drugs is supervised and sanctioned by physicians who control drug supply and dosage, as well as definitions and expectations related to the drug's effects.

Simultaneously, there exist alternative sources of drugs that may serve the same functions for users, but their use is not state-sanctioned and is therefore condemned by society, if not made outright illegal. Indeed, these drugs are often legally defined as having no therapeutic value (Schedule I drugs) and viewed culturally as "evil" drugs that make healthy individuals sick (Szasz, 1974). Despite this skewed cultural orientation, there is much evidence to suggest these illicit drugs and their associated states of consciousness may be of significant value in the treatment and management of a variety of physical and mental health problems. For example, marijuana is classified by the state as a Schedule I drug, yet growing amounts of research (much done in other countries) suggest that marijuana has potential value in the management of pain (Notcutt et al., 2004; Watts, 2004; Hohmann et al., 2005; Woolridge et al., 2005).

Similar findings support LSD use in the alleviation of emotional and physical pain with terminal cancer patients (Grof, 2001). Additionally, marijuana, LSD, and methylenedioxymethamphetamine (MDMA), all Schedule I drugs, have been shown to be of potential value in addressing a variety of mental and emotional problems, including depression and Post-traumatic Stress Disorder (Bravo & Grob, 1996; Grof, 2001; Harris et al., 2000; Naranjo, Shulgin, & Sargent, 1967; Yensen et al., 1976).

Given that we have both legal and illegal sources of consciousness-altering drugs, why would one choose to access and use an illegal drug rather than a socially sanctioned one to alter their consciousness? This question is particularly important when considering that illegal drugs carry significant penalties for their possession. Yet, such use is neither a new phenomenon nor a rare one. While there are wide-ranging theoretical explanations for this illegal use, many theorists have argued that because different psychoactive drugs produce differing altered states, the benefit of the subjective experience of the illegal drug may be worth the risk for the user (Akers, 1998; Fiddle, 1967; Watts, 1971; Weil, 1972).

Recognizing the risks of using illegal drugs, their cost relative to socially sanctioned drugs, and yet the continued demand for them, scientific explorations into the meanings and value associated with illicit drug-altered states of consciousness seem warranted

but, as indicated, they receive comparatively little attention. We contend that this lack of scientific attention stems, in part, from the lingering influence of the temperance movement upon the practice of science. This movement primarily targeted the use of alcohol, currently a legal drug to both possess and consume. This lingering influence serves to repress exploration of DASC by ignoring previously established scientific understandings, by limiting conceptualization of subjective experiences, and by restricting scientific investigations that may lead to greater understandings of the therapeutic value of these illegal DASC.

We would like to examine then how this one particular cultural factor, the temperance orientation, currently functions to influence scientific practice and resultantly repress, ignore, and even deny these earlier understandings, as well as the development of new knowledge, despite the fact that science is supposed to be value-neutral. We also outline some methodological practices aimed at overcoming this repression.

Temperance-Oriented Cultures

Social scientists have long recognized that the context in which science is practiced may have an influence upon it. Context may influence the practice of science in terms of what is examined and what is not, how it is examined, and what types of conclusions can be drawn from it. Scientists studying the use of psychoactive drugs have long recognized that cultural factors undeniably influence research in this area (Heath, 1988; Katcher, 1993; Pauly, 1994; Peele, 1992; Room, 1984).

Of particular interest to the current inquiry is the influence of what has been referred to as "temperance cultures" (Levine, 1992) upon the practice of science. For Levine, this term refers to societies that had large and enduring (alcohol) temperance movements during the 19th and early-20th centuries (Levine, 1992, p. 16). In the U.S., temperance efforts aimed at the consumption of alcohol began in the 1820s and represented the first major public efforts to control drug use.

Levine argues that a principal source for this temperance ideology was Protestantism. Using the work of Weber and Durkheim, he notes that the constant maintenance of self-control was one of the major concerns of Protestantism. To surrender self-control was evil in and of itself, but it was also the caldron from which other evil activities originated. From the nonintoxicated observer's viewpoint, the individual "under the influence" (of alcohol) has diminished self-control, which is viewed as undesirable, evil, and even dangerous.

A result of this temperance orientation was the tendency to view all those who use drugs to alter their consciousness as deviant. As Mills pointed out in his seminal article on the social pathologists (1943), many of the first American sociologists came from strong Protestant backgrounds, focused much of their attention on the pathology of inebriety, and consequently viewed all psychoactive drug use as deviance and the root cause of other individual and social problems.

Historically, the temperance movement was concerned not with alcohol consumption per se but with what was considered the misuses of alcohol often referred to as intoxication, inebriety, and intemperance. Each of these terms can be understood as

states where the drug user's consciousness is altered in an observable manner. Alcohol use in this way was equated with the alteration of consciousness to the point that the drinker was viewed as not being in control of one's self. This concern for loss of control has developed into a key diagnostic criterion in the later alcoholism model of deviant drinking (Jellinek, 1960).

In more recent history, scholars have identified a "New Temperance Movement" in the field of alcohol studies (Heath, 1989; Pittman, 1991). Essentially, this new movement focuses upon restricting access to alcohol and highlighting the health and social dangers of all but the most minimal of use. This new temperance movement coincides with what Engs (2000) refers to as the most recent "Clean Living Movement." She identifies issues ranging from mood-altering drug use to sexuality, diet, and physical fitness, locating much of the ideological source within Puritanism's obsession with and repression of sin and vice (Engs, 2000, p. 9). She also locates the influence of this movement upon the practice of science, especially the suppression of contrary evidence.

This influence may be best reflected in the 1980s debate in alcohol studies between "problem inflators" and "problem deflators" (Heath, 1984, 1988; Room, 1984). This debate centers on charges that scientists utilizing primarily quantitative research methods artificially inflated concerns for alcohol-related problems because of their "dry" (temperance) orientation. Conversely, others, using primarily qualitative research methods, were viewed as problem deflators because of their "wet" orientation. Both sides assumed that these biases stemmed from the comparative dry/wet orientation of the times in which they lived and were trained as researchers.

Alcohol's legal history places the consumption of this drug in a unique situation vis-à-vis illegal drugs. Today, illegal drugs are managed within a prohibitionist framework that is stricter than that imposed upon alcohol during its period of prohibition which ended in 1933. During this time, the manufacture, transportation, and sale of alcoholic beverages were prohibited, but the possession of alcoholic beverages by adults was never prohibited. Even today, only the observable alteration of consciousness through overuse of this drug (intoxication) is legally prohibited through public intoxication and drunk driving laws.

In addition, today alcohol represents one of the most widely used, legally available, psychoactive drugs, and the primary drug of choice for most adults who use such nonmedically prescribed drugs. Thus, despite the alcohol focus of temperance movements, alcohol and its associated DASC remain less stigmatized than the illegal drugs. Despite alcohol's greater acceptance, the cultural history of alcohol has created the model for scientific practice within the illegal psychoactive drug-use arena.

DASC and Scientific Practice

It is the contention of this inquiry that despite established scientific findings that suggest benefits associated with DASC, the temperance culture that pervades the United States represses such understandings and represses greater exploration of their potential. As explained previously, much of our discussion is focused within alcohol studies as the historical root of the temperance cultural influence. Research investigations into

alcohol consumption are focused primarily upon two concerns: negative health consequences and deviant drinking.

Regarding negative physical health consequences, little effort has been made to evaluate or balance these concerns with the positive mental and physical health consequences of the drug's effects. For example, evidence indicates that light consumption of alcohol is beneficial to one's physical health, and yet, unlike most countries, the U.S. has been reluctant to acknowledge or recommend consumption of alcohol for improved physical health at any level (Hawks, 1994).

The second focus of current research dealing with alcohol consumption is upon "deviant" drinking, particularly the social consequences of frequent intoxication. These examinations coincide with the temperance concern with altered states, with the focus only on problems at the expense of potential benefits. This temperance-based deviantization of intoxication in alcohol research can easily be seen in Cahalan's (1970) classic work *Problem Drinkers.* In constructing his problem-drinkers scale, he recognized legal, occupational, interpersonal, and health problems that may be related to drinking, but he also utilized frequent intoxication in and of itself as a unique problem, totally independent of the other problems.

Much of recent scientific practice ignores or actually represses earlier understandings through increasingly limited conceptualization of these DASC which are reflected in measurement practices. Generally, alcohol-based altered states have been measured on either an assumed linear dose-response basis (quantity-frequency indices) or a self-reported frequency of altered states (number of times intoxicated). Clearly, the latter measure assumes only a single DASC, which perhaps demonstrates the temperance concern with intoxication, not a scientific goal to understand DASC.

Despite the widespread recognition that there are multiple DASC, typically the closest most alcohol research has come to this recognition has been the acknowledgement of two or three states of consciousness based upon quantity intake measures. For example, Cahalan (1970) utilized three dose–response measures of drinking/altered states: the frequency of consumption of four, eight, or 12 or more drinks at one time. These measures reflect the temperance influence as well in that definitions of deviant drinking are based solely upon amount of intake with no consideration of the time span of consumption. Despite the implication that each of these levels represents an indirect measure of a DASC, it is quite possible for one to consume one drink per hour and experience no altered states.

More recent alcohol research, however, has typically reduced this conceptualization to only one. For example, recent research (Wechsler, Davenport, Dowdell, Moeykins, & Castillo, 1994; Wechsler & Isaac, 1992) has measured "binge" drinking as the consumption of five or more drinks for males and four or more drinks for females at one time. These measures equate deviant drinking with a lower level of alcohol intake than previous research, while they also enhance the stigmatization of such drug use through the use of the term binge.

Historically, binge drinking was associated with dipsomania in which one "drinks to stupor, and awakens to again drink himself to the same condition" (Lykke, 1878, p. 90). These episodes may go on for weeks or even months (Howard, 1909). These

conceptualizations clearly separated binge drinking from normal intoxication and saw it as both qualitatively and quantitatively different. Now, however, intoxication and binge drinking appear to be similar measures. Further, the term binge connotes a clear loss of control over the drug-taking and consequent drug-influenced behavior.

Most research dealing with illegal psychoactive drugs, while emphasizing the same physical health and deviance concerns, carries with it an even more confined and restrictive conceptualization of DASC. While much of this research typically asks about frequency of use of these drugs, rarely is there any effort to attempt to measure dosage or time-frame. Similarly, there is no equivalent recognition, as in the alcohol research, of the subjective experience of intoxication/DASC. While much of alcohol science recognizes the subjective basis of definitions of intoxication, research on illegal drugs rarely exhibits such recognition. Rather, most of this research assumes that if one uses a particular drug, regardless of dosage level or for that matter any other factor, it results in a singular, monolithic altered state: "being high."

Two other major data-collection practices also serve to limit our understandings of the potential value of DASC. First, the almost total scientific reliance on retrospective self-reports of drug use assumes that respondents are not currently under the influence of any drug, and in fact, most human subjects review boards will disallow the collection of data from participants under the influence of any drug. This practice draws the conclusion that usable data about drugs can be ascertained only when respondents are not under the drug's influence.

Because DASC accessed through the use of illegal drugs are viewed as deviant activity, retrospective self-reports can be influenced by these societal views. For example, when rates of self-reported (retrospective) alcohol consumption are compared to official sales records, evidence of underreporting of consumption may be as high as one-third (Midanik, 1982; Smith, Remington, Williamson, & Anda, 1990). If one turns to questions regarding why one uses alcohol, the validity of such data has been recognized as problematic for decades (Bacon, 1943). This much bias with a legal drug only raises more significant questions regarding the illegal drugs.

The implication that data collected while subjects are experiencing DASC is of no scientific value stands in sharp contrast to the disinhibition hypothesis most often associated with alcohol use. To the extent users under a drug's influence may experience less inhibition or pressure for socially appropriate responses, researchers may actually receive more valid, truthful responses when subjects are under the drug's influence. Unfortunately this methodological issue remains fundamentally unexamined.

A second potential source of restrictive bias stems from the biases of the researcher. Primary data-collection practices are often based upon researcher-constructed categories and definitions such as "intoxication" and "binge," rather than subject-constructed categories and understandings. Evidence suggests researcher bias in the interviewing process can be problematic as well, such as evidence of the interviewer's drinking practices influencing the interviewees' responses regarding their own drinking practices (Kirsch, Newcomb, & Cisin, 1965; Mulford & Miller, 1963). As a result, the researcher's drug-use history and experiences should be recognized as a framework to evaluate the objectivity of collected data.

This seems particularly true regarding researcher experience with the particular drug under study, not just psychoactive drugs generally. However, such knowledge of researchers' drug use experience is quite rare. Anthropological researchers may acknowledge their experimentation with a psychoactive drug used by various indigenous peoples for ceremonial purposes (Wax, 1957), and similarly historic research with psychoactive drugs has acknowledged researcher experience (Bromberg, 1934). These practices, however, appear to have faded from scientific practice. The acknowledgement of one's own drug experiences within today's practice of science appears to be viewed as at least irrelevant, if not unprofessional.

Study of Drug-Altered States of Consciousness (DASC)

The study of any altered states of consciousness is fraught with methodological problems, beginning with consensus on operational definitions (Baruss, 2003; Crapanzano, 2001; Spivak, 2004). Scientists have clearly established that a variety of factors impinge upon and influence subjective experiences associated with DASC. From a pharmacological basis, we know there is a dose–response relationship between quantity of drug intake and subjective experiences, although there is no reason to assume such relationships are linear. It is also recognized that the dose–response relationship is influenced by numerous physiological factors such as weight, metabolism, potential drug interactions, and overall health conditions.

Research has also shown that DASC are impacted by a variety of social factors. For example, Zinberg (1984) speaks of the significance of set and setting. Set refers to the user's mental condition and framework for understanding drug effects, while setting refers to the physical and social surroundings in which the drug experiences occur, such as the number and types of individuals present, the nature of the user's relationship to these individuals, and the purpose of the grouping. The user's familiarity with the physical surroundings, noise level, and lighting may also have an impact on these experiences.

Scientists have also long recognized the importance of users' definitions and expectations surrounding drug effects and experiences, and that these are highly dependent upon the influences of others (Becker, 1967; Jones, 1971; Weil, Zinberg, & Nelsen, 1968). Within the pharmaceutical marketplace, physicians, advertising, or drug manuals typically provide these definitions. With illegal drugs, however, definitions and expectations of the subjective experiences come primarily from experienced users. Indeed, as Becker (1967) notes, definitions by experienced drug users often serve as the most salient source of such definitions and expectations often simply because of the definitional vacuum.

One's drug history includes the types of psychoactive drugs used, the experience with those drugs, and the definitions and expectations they have learned. Definitions and experiences appear much different for naive, first-time users versus long-time, experienced users (Weil et al., 1968); they also vary, depending upon the number or range of different psychoactive drugs one has experienced. Thus, the effects of the same dosage of the same drug may be experienced differently by different individuals and differently at various times by the same individual.

Given that DASC associated with illicit drugs are primarily influenced by the definitions of other users, often within a drug-taking situation, to better understand these experiences, scientists need to look for commonalities. Unfortunately, such inquiries immediately encounter a significant language problem because no shared, common, or universal language exists to describe DASC. Some theorists argue that the creation of such language may not even be possible to construct within ordinary states of consciousness (Crapanzano, 2001; Spivak, 2004; Weil, 1972).

Consequently, even the simplest, albeit scientifically significant, question ("How high are you?") has no agreed upon measures or categories. The creation of common language often stems from discussions of shared experiences, but discussions of altered states of consciousness, especially those that involve illegal drug use, rarely occur openly.

This does not mean that language does not exist within small drug-using groups whose members share the same drug, often at the same time, in the same setting, at similar dosage levels, and who also have the same set of expectations regarding the drug experiences. This circumstance provides an excellent setting for further scientific exploration into illegal DASC in that these small drug-using groups would constitute valid, primary data sources. Broader scientific generalizations can then be developed from commonalities across these small groups.

Despite the universal language problem, science has provided some understandings around which conceptualizations could be framed. To begin with, there is evidence of a multitude of drug-altered states of consciousness that vary both qualitatively and quantitatively. Out of these, most users of psychoactive drugs, both legal and illegal, have what is known as a "drug of choice." To the extent that users choose a particular drug to achieve a certain type of DASC, this strongly suggests that there are subjective drug-specific differences in these states.

This understanding is supported by the recognition that psychoactive drugs have differing effects on user physiology. Drugs may be central-nervous-system stimulants or depressants, some are hallucinogenic, some are addicting, and some affect appetite. Understanding these aspects stands to shed important light on the reasons for use and functions served by the use of a particular psychoactive drug.

Users of a single psychoactive drug also have the ability to experience multiple altered states on both a quantitative and qualitative basis. Most obvious in this respect is the previously noted dose–response effect, an understanding of which is crucial for an expanded understanding of DASC. To make matters even more complex, the user's perception of the difference in these states may be influenced more by definitions and expectations rather than actual differences in dose. Research with experienced marijuana smokers who report altered states despite being administered a placebo (Jones, 1971; Weil et al., 1968) is a good example of this complexity.

Furthermore, research dealing with controlled drinking programs has indicated that drinkers can be trained to identify differing levels of drug effects and control them (Lovibond & Caddy, 1970: Vogel-Sprott, 1975). There is also evidence that many illegal psychoactive drug users manage the consumption of their drug of choice in order to attain and maintain a particular state of consciousness (Rodin, Domino, & Porzak, 1970).

Two other factors related to psychoactive drug use that should frame our understandings of DASC deserve attention here. The first is the ability to "pass" (Becker, 1963) which means the ability of one under the influence of a psychoactive drug to learn to manipulate or control the outward appearance of the drug's effects. For the study of DASC, this phenomenon implies that outward, recognizable drug effects may be poor indicators of the users' drug experiences. This is likely even more true if the observer/researcher has little or no personal experience with the particular drug, or for that matter any personal psychoactive drug experiences.

The second factor is the recognition of what is referred to as "state-dependent learning" (Goodwin, Powell, & Hill, 1974; Weingartner & Fallace, 1971) which means that, just as certain things may be learned and then only recalled under hypnosis, so too certain understandings may be gained and then only recalled under specific DASC. Therefore, to gain a fuller understanding of DASC, observation, if not more direct data collection such as questioning, should occur while the subject is experiencing the same state and can access such state-dependent knowledge.

Study of DASC and State Control of Research

While scientific practice may be influenced by cultural factors, such as a temperance orientation, science nonetheless still strives to operate as objectively as possible. In contrast, the state, which makes no claims of objectivity, is even more susceptible to these cultural influences. To the extent that it is in the state's political interest to serve these cultural interests, they in turn influence the state's control over scientific practice.

Most research requires financial support which makes researchers vulnerable to some type of influence. The largest source of funds for research dealing with illegal psychoactive drugs is the federal government, which is problematic given the influence of the current temperance culture. During fiscal year 2006, the federal government, through the National Institute for Drug Abuse and the National Institute for Alcoholism and Alcohol Abuse, proposed to spend a total of $851,317,000 for research project grants in these areas (National Institute on Drug Abuse, 2005; National Institute on Alcoholism and Alcohol Abuse, 2005), but the funding application process clearly indicates that a temperance orientation exists. Both the Office of Substance Abuse Prevention and the National Institute for Drug Abuse, two federal agencies responsible for research and policy in the psychoactive-drug area, have adopted guidelines that delineate proper and improper terminology for their respective grant applications and publications. For example, it is improper to use the phrase "recreational use of drugs" because "no drug use is recreational" or "responsible use of drugs" because "there is risk associated with all drug use" (Office of Substance Abuse Prevention, 1990, p. 1). Such language requirements clearly deny the possibility of illegal DASC being of any positive therapeutic value and therefore unworthy of scientific inquiry using state funds.

Even more restrictive of scientific inquiry into the potential value of DASC is the governmental control and influence over the conditions under which research is permitted. Most central to this issue is the concern for the protection of human subjects involved in scientific research. The state is key in this regard as it controls laws

and policies defining the legal status and liability of researchers associated with conducting research. Unlike physicians, clergy, and attorneys, scientists do not hold a protected status with regards to confidential information, so if a scientist becomes aware of any illegal activity, such knowledge is not legally considered confidential and therefore must be surrendered to state authorities upon demand under criminal penalty for failing to do so.

Another aspect of governmental control over scientific practice deals with definitions involved in the protection of human subjects. All research funded by the state and conducted using human subjects is required to gain approval of Institutional Review Boards assigned the responsibility of protecting the rights and safety of research subjects. The core standard in this regard is voluntary, informed consent of subjects regarding their research participation. While of fundamental ethical value, these concerns may hinder exploration of DASC. To the extent DASC are viewed from the temperance orientation as a loss of self-control, subjects "under the influence" cannot logically give informed consent because it is viewed as neither voluntary nor informed if the subject does not have self-control. Additionally, even if a subject has given voluntary informed consent while not under the influence, it is assumed that their ability to withdraw consent at a later point in the research process while under the influence is diminished.

As a result, direct observation and data collection while subjects are under the influence is typically seen as a violation of these ethical standards. Because the temperance orientation views all drug experiences and especially those involving illegal drugs as a state of being out of control, such research is not possible. Even though most would agree that having only one drink does not cause someone to be out of control, the difficulty in using observation to assess intoxication creates a legally risky situation for the researcher. Unfortunately, guidance as to how to make these decisions is not provided in the scientific literature. Implicitly, these human subject concerns function to cast anyone under any level of influence as vulnerable and in need of state protection.

The state's temperance orientation poses additional problems for scientific exploration of DASC related to the use of illegal drugs. Given the state control schema for drugs, illegal drugs may only be possessed with state approval and only distributed through state supplies. Because of the overarching temperance influence, such approval is quite rare. For example, despite no official declaration of any ban on research dealing with the health effects of smoking marijuana, the state refused to allow/support any such research for almost 20 years (Hilts, 2001).

Indeed, the willingness to allow such research only came about as a result of the scientific community acknowledging potential health benefits of marijuana and pressing the value of further research in this regard (Joy, Watson, & Benson, 1999). This acknowledgement did not, however, produce a watershed of new research, as the editors of *Scientific American* noted five years later in 2004: "… outdated regulations and attitudes thwart legitimate research with marijuana" (Editors, 2004, p. 8).

Arguably the greatest current state restriction on the health benefits of marijuana use is that the only state-sanctioned supply of marijuana comes from a state farm in Mississippi. This source has yielded a rather low THC content product that some have

questioned as to its ability to create desired effects (Multidisciplinary Association for Psychedelic Studies, 2005; Tierney, 2005). Scientific efforts to develop an alternative source of higher-grade marijuana, however, have been met with consistent state disapproval (Multidisciplinary Association for Psychedelic Studies, 2005). This issue is currently being heard in the courts.

New Directions for Research on DASC

From our previous discussion, it is clear that scientific study of illicit DASC remains seriously underdeveloped and why. Furthermore, because of the temperance cultural orientation, even previously established, scientific-based understandings appear to go unrecognized and repressed. In a truly unfettered scientific world, scientific data essential to further understandings would be collected in naturally occurring, socially based, drug-taking situations where subjects define the altered states/drug effects while under the influence, in their own terms, and under conditions where the researcher has some experience with DASC, ideally with the drug under study.

Numerous changes in acceptable scientific practice would need to occur in order to engage in such research. Scientists would need some measure of privileged communication assurance that would allow for risk-free data collection wherein subjects' confidentiality could not be threatened. Second, scientists should be encouraged to report their own drug-use history as a factor that could potentially bias or enlighten their drug-related research. Third, governmental control over research funds and supplies should be diminished or given over to scientific organizations to control and dispense. Finally, the scientific community needs to recognize that valuable data can and should be collected while subjects are under the influence. Indeed, certain scientific understandings such as state-dependent learning can only be accessed while subjects are under the influence.

For many scientists, such practice would be viewed as unethical, deviant, and even illegal forms of scientific inquiry. While such practices would clearly raise a variety of ethical considerations, the fact that these ethical issues are not even discussed in the scientific literature does not mean they are insurmountable. However, given the temperance influence over the study of illegal DASC within U.S. scientific practice, such changes in scientific practice or even open debate regarding them are highly unlikely, except in forums such as this. To be sure, without the diminishment of the stigmatization of the seeking of illegal DASC, even the most obvious potential therapeutic value will likely remain unexamined.

Fortunately, such research has not been as repressed outside of this cultural context. As evidenced by a recent editorial in the British journal *The Lancet* (Editors, 2005) calling for renewed research efforts with psychedelic drugs, segments of the international scientific community recognize the potential therapeutic value of illegal DASC. Additionally, scientific interest groups have formed to support and encourage such inquiry. For example, the Multidisciplinary Association for Psychedelic Studies raises funds for this type of research, and lobbies the state to expand such research efforts. As witnessed by recent Multidisciplinary Association for Psychedelic Studies efforts,

however, much of this research is being conducted is countries that do not have a temperance history and ideology. For example, the Multidisciplinary Association for Psychedelic Studies is currently involved in supporting research to evaluate the therapeutic potential of ayahuasca, dimethyltriptamine, ibogaine, ketamine, LSD, mescaline, methylenedioxyethylamphetamine, MDMA, peyote, psilocybin, and salvia divinorum in the U.S., but also in Brazil, Germany, Israel, Netherlands, Peru, Russia, Spain, and Switzerland (Multidisciplinary Association for Psychedelic Studies, 2005).

The scientific roadblocks to a full examination of illicit DASC notwithstanding, there are other ways some of the temperance bias may be overcome. Fundamental to the shift in scientific practice is the fuller recognition of the therapeutic value of illicit DASC. Research with alcohol use appears to hold the most promise because of its wide use and legal status as a drug.

There is an implicit assumption within much research that those who drink (or use other drugs in an illegal fashion) to alter their consciousness are either unaware or irrationally neglectful of the drug's harmful effects. If, however, we assume they are aware, rational individuals, then we need to examine more closely questions regarding the nature of the benefits they derive from such use, their comparative value weighed against the detrimental effects of such drug use, and their comparative value weighed against the socially sanctioned pharmaceutical sources of such benefits.

Another area of inquiry that may reveal valuable understandings and serve to dispel some temperance-based misunderstandings is the assumption that no valuable data can be collected when one is under the influence. Most would recognize there is a point "under the influence" where data may be of little value but that does not mean that valuable data cannot be collected prior to that point. Even concerns regarding subjects' ability to continue to give informed consent could be easily overcome by simply periodically asking the subject to explain to the researcher their understanding of their rights under informed consent.

In the end, until the bias of the temperance ideology is overcome, and all drugs and their use are viewed in an equal, objective, neutral manner, the therapeutic value of both legal and illegal DASC will remain repressed at possibly a heavy cost to users and others who may also stand to benefit from their therapeutic use.

While this essay was being prepared for publication, debate was raging regarding a controversial study conducted by Johns Hopkins University designed to examine the mystical effects of psilocybe mushrooms. Sixty percent of the participants reported having had a "mystical experience" during the study period, and 2 months later 79% reported increased levels of well-being and life satisfaction (Victory, Radhakrishnan, & Carter, 2006). The study, however, was coming under rapid fire, even from scientists associated with the National Institute on Drug Abuse, which was a funding source. Most of the criticisms were related to the issue of the safety of human subjects despite the fact that we could assume that appropriate informed consent was given. Perhaps it is at least a small victory that federal funds were awarded for this investigation, although one has to question the manner in which the research question influenced the federal government's willingness to fund: the search for a pathway into a deeper religious experience.

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