HOW TO UNDERSTAND SOBRIETY: A KEY TO LIVING HAPPY, JOYOUS, AND FREE

William Doverspike, Ph.D.
Drdoverspike.com
770-913-0506

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In some ways, I am surprised I did not put my thoughts in writing in 1982, when I first started practicing in the area of addictions, or even in 2010, when I first started teaching graduate courses in addictions. After writing 7,000+ neuropsychological reports, writing thousands of pages of progress notes, and publishing articles and books on other topics, I have found the subject matter of addictions to be one of the most fascinating topics in the field of clinical psychology. Even more mysterious is that it is a phenomenon that is more experienced and lived rather than described.[1] As I recently explained to someone who has only had one drink in her entire life—and especially as one who lives happy, joyous, and free—I realize that the topics of addiction, recovery, and sobriety are not really part of the world of some people.

Abstinence refers to the absence of ethanol and other substances[2] or their metabolites in the blood or tissues of a person. *Sobriety* refers to an abstinent person's emotional and spiritual actualization and growth. Abstinence is a necessary but not a sufficient condition for sobriety. The Big Book[3] of Alcoholics Anonymous (AA) describes one of the theological assumptions about sobriety: "We are sure God wants us to be happy, joyous, and free" (Alcoholics Anonymous, 2001, p. 133).

When I (and most of the hundreds of *recovered alcoholics*[4] with whom I have worked) use the term *sober*, we are usually referring to someone who meets these two criteria:

(1) The person has been continuously abstinent from alcohol and other drugs (especially benzodiazepines and opioids) for a significant period of time, minimally at least 30–90 days but preferably 12 months, and

(2) The person is working the 12 Steps with a sponsor in Alcoholics Anonymous (AA) and, in the majority of cases, is also working in weekly counseling with a licensed professional who has both knowledge and skills in addictive disease treatment.

Drug addicts[5] often use the ambiguous term *clean* to refer to abstinence from drugs other than alcohol, although they may not be abstinent due to their continued use of alcohol and nicotine. The term *clean* is ambiguous because it can be applied to someone who simply tests negative on a urine drug screen. Although a negative test result technically cannot prove anything, it strongly suggests only that the person has probably not used a substance in a specified period of time—with the time period dependent on the type of substance. For example, water-soluble substances may clear the blood and urine within a matter of hours, whereas traces of fat-soluble metabolites such as the cannabinoids can remain in the system for weeks (rarely up to 30 days unless the person is obese and has been ingesting large quantities over a long period of time). A negative drug screen can also occur when the person has used an *adulterant* or masking agent in the sample.

Adulterants are substances that cause false negative results in drug tests. They interfere with the screening test and/or destroy the metabolites of the drug that is present in urine. For this reason, a negative drug screen can indicate that the active addict has the knowledge, skill, and resources to do one of these things:

(1) Use an adulterant, which is a masking agent that will produce a false negative on a urine screen;

(2) Pay a lab technician with cash at one of the popular private laboratories, although this strategy will not work at a forensic laboratory or even in most hospital laboratories; or

(3) Employ both of these methods.

Neuropsychological recovery takes time over days, months, and even years. From my observations and the reports of thousands of recovered alcoholics, it takes about a year before a sober alcoholic "comes out of the fog." Neuropsychological recovery from alcoholism is a bit like recovery from a head concussion, in which there is generally more rapid cognitive improvement early in recovery and slower recovery with increasing time. At the same time, corresponding relapse rates are much higher in early recovery.[6] As a general rule (with many exceptions), there is more cognitive recovery in the first 30–90 days or so, with a much smaller degree of cognitive improvement at 18–36 months. A person having 1–2 years of sobriety is usually able to begin understanding the damage they have done. Only then do they have a real chance to begin understanding *why* they drank. One year of sobriety marks a milestone in recovery. It is only at the 5-year sobriety point that the relapse rate drops to nearly zero (Vaillant, 2003).[7]

There is no such thing as "figuring it out" as a prerequisite to sobriety. Unfortunately, most active alcoholics who seek therapy waste time trying to figure out why they drink in an attempt to stop (or in most cases, control) their drinking. It does not work in this direction. Instead, the person must first stop the toxicity, maintain abstinence, clear neurologically, and then begin to think clearly about things—even if the person has sustained permanent cerebral damage. A general operating principle is this one: "The most conceptually difficult steps of a recovery program can occur only after the recovery of the underlying cerebral functions subserving those abilities" (Doverspike, 1986, p. 3). Alcoholics in early remission learn that "figure it out" is not a slogan of recovery. Rather, they learn to "reason it out" with someone else—that is, a sponsor.

The extent to which a sober person can clear neurologically is related to the person's *history* (e.g., age of onset), *dose level* (e.g., how much and for how long the person drank), *age of onset* (e.g., how long the person drank), and *age of abstinence* (e.g., how long the person has not been using ethanol or other drugs. In terms of age of abstinence, it may not be the actual age of the person but rather the age of the brain and the liver. That is, a person with a history of multiple concussions or head injuries is less likely to regain full cognitive functioning during recovery from addiction. Similarly, a liver that has spent years detoxifying the body from hepatotoxic substances may be functionally older than a liver that has had less of a toxic load over the years. Because one of the main functions of the liver is to detoxify the body from harmful substances, a failing liver will eventually lead to a failing brain.

There seems to be a theoretical *critical age* of around 40–45 years of age, beyond which full cognitive recovery is less likely. However, there are some adults who have sustained such severe damage from heavy drinking as young children that they never achieve full cognitive recovery. In contrast, there are some older adults (e.g., those who are medically healthy or who "crossed the line" of addiction later in life) whose cognitive functions can clear completely.

Some people have what is called *white knuckle sobriety*, meaning they are abstinent but not sober. They are often just "barely hanging on." It is a common misconception to think that when a person stops using alcohol or drugs, the person will become transformed into a healthy person. More typically, a person's character defects, negative habits, and personal shortcomings may actually get worse when the person becomes abstinent. Once a person simply stops using substances, their most practiced coping mechanism (addiction) is gone. The person no longer has a substance to escape, to relax, to numb emotions, or to find relief from life's everyday stressors. Without one's drug of choice in which to find comfort and solace, the person may resort to anger, dishonesty, emotional dysregulation, verbal abuse, and other tension reduction behaviors to find relief from the realities of life. Abstinence is not enough because it does not replace the substance with a solution. In contrast, sobriety as a way of life is about finding healthy solutions and learning new ways of living. Sobriety is focused on developing a new identity, maintaining emotional regulation, developing healthy relationships, and learning new ways of acting and thinking.

Sobriety. The term *sobriety* is not used to describe the condition of someone who goes a few weeks without drinking. Individuals with *episodic* alcoholism (in contrast to the *continuous* type) often go a few weeks without drinking. An active alcoholic may even be able to have an occasional drink or glass of wine. Then, at some point that is usually completely unpredictable to the alcoholic, he or she may have a drink and be unable to figure out how they got raped, how their phone got stolen, or how their car got smashed. An active alcoholic may be unable to figure out how he ended up in Kansas—as one of my favorite physicians disclosed to me after I asked him about his last drinking binge before he became sober many years before. For steady drinkers, especially those at the severe to terminal stage of the disease process (i.e., subclinical, mild, moderate, severe, terminal), the person usually cannot go more than 72–96 hours without a drink or some other drug (i.e., benzodiazepines or opioids). These unfortunate souls are not sober. With few exceptions, a person who cannot go more than a week without drinking or drugging is probably not sober.

A person at the severe or terminal stage of addiction may desperately want to stop drinking and—at the same time—may not want to stop. At this stage, the addicted person does not drink to feel good but drinks to avoid feeling awful. When a person shifts from drinking to feel good to drinking to avoid feeling bad, they have basically *crossed the wall* into addiction. In terms of operant behavioral mechanisms, it is a shift from *positive reinforcement* to *negative reinforcement*.[8] Once someone has crossed the wall, it is difficult to get back. Quoting Agnes Allen (1978) somewhat out of context, "Almost anything is easier to get into than out of."

Relief drinking is a term used to describe a nip or sip of alcohol to stave off withdrawal symptoms. With any central nervous system depressant such as ethanol, mild withdrawal symptoms include mild anxiety and irritability. Moderate symptoms may include elevated blood pressure, significant anxiety, and a subjective feeling of jitteriness or shakiness. In more severe cases, the shakiness can include actual physical tremors or even seizures. Relief drinking is usually required within 24–72 hours of the last drink. It essentially delays or postpones the onset of withdrawal symptoms. This addictive process, including the craving (withdrawal) and the relief drinking, is typically outside of a person's conscious awareness.

Denial is the term used to identify the part of the addictive process that is outside of one's awareness. Although the tip of the addictive iceberg is conscious, the largest part is below the surface or unconscious. The psychological term *unconscious* simply means that events or processes are outside of the person's conscious awareness. To use a metaphor, addiction is a disease that tells the person they don't have it. An interesting aspect of denial is that the more severe the addiction, the more massive the denial. In very severe cases, denial can reach delusional proportions.

Well-intentioned friends and family members often say that addiction and alcoholism can be prevented by "Just saying no." This approach may be effective for someone who is abstinent or an occasional drinker or drug user. However, once someone has crossed the invisible line into addiction, such a simplistic approach as "just saying no" is useless.

Disease. A *disease* has several defining characteristics: etiology, phenomenology, dysfunction, course, treatment, prognosis, and outcome.[9] Comparisons can be made with other chronic diseases—asthma, hypertension, diabetes—in which etiology, heritability, personal choice, and treatment response (adherence and relapse) play major roles in course and prognosis. These characteristics are briefly described below:

Etiology includes *internal factors* (e.g., genetic, epigenetic, prenatal, developmental, synaptic, neuroplastic) and *external factors* (e.g., prenatal environmental, familial, social, cultural, behavioral).

Phenomenology includes *symptoms* (i.e., distress experienced or reported by patient) and *signs* (i.e., observations or inferences made by the by the clinician or others).

Dysfunction (impairment in functioning) includes *severity* specifiers (i.e., subclinical, mild, moderate, severe, profound, and terminal).

Course over a period of time includes descriptors such as *longitudinal course* specifiers (e.g., progressive, episodic, variable, chronic). For those who are abstinent, there are also remission specifiers such as "early" (≥ 3 months but <12 months) and "sustained" (≥12 months) without symptoms (except craving).

Treatment can include various approaches ranging from *abstinence-based* treatment for addiction and alcoholism to *controlled use* or moderation management for problematic use that does not involve tolerance or withdrawal. Component treatment includes biological, behavioral, cognitive, psychological, psychosocial, pharmacological, and environmental variables.

Prognosis of a disease can include various outcomes (e.g., excellent, good, fair, guarded, poor).

Biaxial Model of Addiction

One of the most useful models of addiction is its conceptualization as an integration of genetic, physiological, psychological, and psychosocial processes that lead to increased frequency, intensity, and duration of substance use in a pattern that becomes increasingly unresponsive to adverse personal consequences or external circumstances (Doverspike, 2011, p. 97; 2015, p. 3).[10] The *bi-axial* model of addiction was first introduced in 1976 by the British psychiatrist James Griffith "Griff" Edwards, M.D. and his American colleague, Milton M. Gross, M.D., in their definition of Alcohol Dependence Syndrome (ADS). In this bi-axial model, one axis depicted the processes of *dependence* and the other axis depicted the social, legal and other *consequences* of heavy drinking (Edwards, 1986; Edwards & Gross, 1976). The ADS concept of dependence was generalized to other drugs (Edwards, Arif, & Hadgson, 1981) and later became the basis for the DSM-III-R (American Psychiatric Association, 1987) concept of Substance Dependence. By requiring the presence of three or more criteria within a 12 month period, DSM-III-R was more diagnostically rigorous than its predecessors.

The bi-axial model is useful not only in differentiating among the various stages of the continuum of substance use disorders, but the it has clinical utility when designing appropriate levels of intervention that are titrated to the type of condition present. This model helps provide an understanding between abstinence-based and controlled-use paradigms (Doverspike, 2011). For example, controlled use may be an option for social drinkers, whereas abstinence is the treatment of choice where there has been a history of unsuccessful efforts to control use.

Evidence-Based Model of Addiction

One of the best evidenced-based definitions of addiction comes from George Koob, Ph.D. (2003, 2013): "Drug addiction (and alcoholism) is conceptualized as a chronic relapsing syndrome that moves from an impulse control disorder involving positive reinforcement to a compulsive disorder involving negative reinforcement." Although social drinkers and even some problem drinkers may drink to feel good (i.e., positive reinforcement, albeit only in the short term), alcohol-dependent individuals drink to keep from feeling bad (i.e., negative reinforcement, in which a drink reduces withdrawal symptoms such as anxiety, tension, or restlessness). With severe dependence, alcoholism is no longer about drinking to feel good. Instead, severe dependence involves drinking or using to avoid feeling bad (i.e., to avoid the anxiety, craving, and even the terror of withdrawal symptoms). When an individual depends solely on alcohol (or similarly acting anxiolytics) to manage anxiety, then the individual loses completely the ability to manage anxiety using the more effective tools of emotional regulation. Addiction becomes an almost completely dysregulated state.

As a disorder of dysregulation—behavioral, emotional, relational, social, physiological—addiction can be viewed as a downward spiral of distinct processes. The addiction cycle includes three distinct stages: (1) binge/intoxication, (2) withdrawal/negative affect, and (3) preoccupation/anticipation (Koob & Le Moal, 2001, 2008). As the addictive cycle progresses downward toward spiraling distress and dysregulation, larger amounts of a substance are used to achieve a state of intoxication followed by predictable preoccupation with obtaining the substance.

Crossing the line into addiction involves a shift from using a substance to feel good to using a substance to avoid feeling bad. It is the increasing prominence of the preoccupation/anticipation stage that begins to define the invisible line between substance abuse and substance dependence.

The Concept of Crossing the Line

The concept of *crossing the line* is applicable to addiction. In 1979, addiction counselor Terance Williams, M.A., wrote a pamphlet to encourage people to examine their drinking habits to decide if they were crossing the very thin line between social drinking and alcoholism. After a career as an administrator of a university library, Williams entered Hazelden as a patient in 1970. After treatment a year later (1971), he participated in Hazelden's counselor training program. In 1972, he helped start the Hazelden Family Program. Instead of confronting people with their *dysfunction*, the program operated on the assumption that people are capable of change when they better understand what's happening in their lives.

Once someone has *crossed the line* from alcohol abuse to addiction, interventions such as *controlled drinking* or *moderation management* are no longer viable options. For social drinkers and even for some *problem drinkers* who have not crossed the line, controlled drinking may be a worthwhile and valid goal. However, "by the time an alcoholic is ill enough to require clinic treatment, return to asymptomatic drinking is the exception not the rule" (Vaillant, 1995, p. 383). In other words, attempting to teach, treat, or train alcohol-dependent individuals to achieve a stable return to controlled drinking is a simply a mirage.

George Vaillant, M.D. is Professor at Harvard Medical School and Director of Research of Research for the Department of Psychiatry, Brigham and Women's Hospital (BWH) in Boston, Massachusetts. BWH is the second largest teaching hospital of Harvard Medical School and the largest hospital in the Longwood Medical Area in Boston. Based on Vaillant's (1988, 1995, 2003) longitudinal observations over 60 years, for most alcoholics, attempts at controlled drinking in the long term end in either abstinence or a return to alcoholism.[11] For target markets that are comprised mostly of alcoholics, the idea of "responsible drinking" is more of an advertising term of Big Alcohol rather than a realistic alternative.[12] For those who have crossed the line into addiction, abstinent-based recovery is really the only workable option. Crossing the line is a bit like a pickle: A cucumber can be turned into pickle, but a pickle cannot be turned back into a cucumber.

Epilogue

One of the reasons that addiction has fascinated me is because understanding its etiology—and especially understanding recovery—involves many of my longstanding areas of interest: chemistry, genetics, medicine, psychology, spirituality, and so forth. I was fortunate to have practically stumbled into this specialty during the Golden Years of health insurance in the 1980s and 1990s. At that time, there were a dozen 28-day inpatient programs in several of the luxurious and well-staffed private psychiatric hospitals around Atlanta. I use the term *luxurious* because, at that time in history, these hospitals had tennis courts, one or two swimming pools, and dining rooms that served food as delicious as any restaurant. Admittedly, I am biased because I have always liked hospital food, at least since I first started working in hospitals at age 17. I was often amused at how many alcoholics and all cocaine addicts complained about how bad the food was after their third day of hospitalization. Drug addicts usually seemed a bit crazier than alcoholics when it came to food, although I do remember many hospitalized alcoholics who complained about the delicious hospital food with little or no awareness that only a few days before they had been eating garbage out of dumpsters. Granted, most of my close friends know that I am biased because my enjoyment of hospital food dated back to my first job on the 2-North post-operative floor of Georgia Baptist Hospital (Atlanta) in the 1960s. My colleagues know how much I enjoy the wonderful free meals prepared whenever I have consulted and presented training seminars at Ridgeview Institute in the last few years.

As a neuropsychologist, I evaluated lots of people with alcohol-related dementias, but I have also worked with the majority of folks who recovered their cognitive functioning. Perhaps partly because my high school and early college aspirations and dreams involved me wanting to be a real doctor, as a neuropsychologist I was fascinated by the complex neurochemistry and the physiology of addiction—and addictive disease recovery. The most interesting part of what I learned—surprisingly—was that the most effective long-term recovery method was the spiritual program described in the first 164 pages of the Big Book of Alcoholics Anonymous. Speaking metaphorically, alcoholism is not only the only medical disease that tells the patient they don't have it. It is also the only disease for which the solution is a spiritual one. It takes a rigorous spiritual program "to fill the God-sized hole that alcohol and drugs can never fill." Perhaps the best part is that every week, I am privileged to be a witness to hear stories of recovery that are as impressive as any miracles I have ever read about in sacred texts.

Active alcoholics—as well as their family members and even professional enablers—usually do not agree with this information. Therefore, they can continue to do it their way.

Bill D.

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Allen's Law was formulated by Agnes Allen (1893–1986), who was a published author (*Metropolis*) and a founding editor of the Reader's Digest Condensed Books. A similar adage ("It is easier to get into something than to get out of it") is often attributed to the late Donald Rumsfeld (1932–1921), who served as both the youngest and the oldest U.S. Secretary of Defense (1975–1977 and 2001–2006).

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Philip Jackson Cook (b. 1946) is Professor Emeritus of Public Policy at the Sanford School of Public Policy at Duke University. He also holds faculty appointments in Duke University's departments of sociology, and economics. He earned his Ph.D. in 1973 at the University of California at Berkeley. He is known for his research on the economics of alcohol abuse, gun violence, and other subjects.

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This slide deck is one of several presentations that I have used in my private seminars and when teaching the Substance Use Disorders section in graduate courses of Psychopathology (2005–2021) and Addictions Counseling (2011–2021) at Richmont Graduate University in Atlanta, Georgia.

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As an adjunct professor, I enjoyed teaching and training hundreds of future counselors at Richmont Graduate University in Atlanta, Georgia (2003–2021). Professional ethics, psychopathology, and addictions counseling are still my subject matter areas of expertise that I enjoy teaching in continuing education seminars at Richmont. At age 70, I decided it was easier and more rewarding to teach private seminars, which involve far less administrative work, fewer uploading and downloading of forms, and no grading of papers.

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Notes

1. Professional Experience: For 30 years (1976–2006), my professional experience included performing approximately 7,000 neuropsychological assessments and evaluations, most of which were conducted between 1978 and 1998. Between the years of 1982 and 1992, probably 90% of these evaluations were conducted on an inpatient basis in hospitals and probably half of these evaluations involved individuals who were addicted to ethanol and/or other substances. During these same time periods, there were hundreds (less than 1,000) of counseling or psychotherapy patients for whom addiction or alcoholism was a primary problem. Of these patients, the length of abstinence was anywhere from a few days to as long as three decades. There were also lots of premature terminations with patients who had no abstinence at all. I my opinion, a person cannot make clinically significant progress in psychotherapy without also maintaining abstinence.

2. Ethanol and Other Substances: The term "ethanol *or other substances*" is important for several reasons. First, substances that are central nervous system depressants (such as barbiturates) can prolong ethanol addiction because such drugs are metabolized through the cytochrome P-450 enzyme system. Secondly, anxiolytics (i.e., anti-anxiety) and benzodiazepines have some properties similar to ethanol to the extent that all of these substances increase the availability of the gamma-aminobutyric acid (GABA), which is the chief inhibitory neurotransmitter in the developmentally mature mammalian central nervous system. GABA's principal role is to reduce neuronal excitability throughout the nervous system. It is the increased availability of GABA at the synaptic level that gives a person a sense of relaxation and well-being. To the extent that a person begins to rely excessively on a substance-induced increase in GABA, the person correspondingly begins to lose the behavioral and cognitive skills to relax and feel good without the use of a substance. In this sense, alcohol is like a crutch and then later like a wheelchair. Conversely, when the GABA-inducing substance is no longer available, the addicted person experiences increased neuronal excitability (i.e., withdrawal anxiety).

Alcoholics who deny that they ever have withdrawal symptoms are likely to be using *relief drinking* to reduce withdrawal symptoms such as anxiety. Because benzodiazepines decrease anxiety in the short term, withdrawal symptoms can also be forestalled by using these drugs. Acute withdrawal symptoms generally peak within 24–72 hours after a person's last drink and the withdrawal symptoms resolve within 4–5 days. For a heavy drinker, the withdrawal timeline is similar to the description below:

5–10 hours: At the mildest level, a person may experience only a subjective sense of anxiety and irritability approximately 5–10 hours after the last drink. For an occasional social drinker, one drink in the evening or even as early as at *happy hour*, will result in increased neuronal excitation approximately 4–12 hours later, resulting in the person often waking up in the middle of the night. At moderate to severe levels of alcohol dependence, the person may experience some shaking (tremors), sweating, sleep disruptions, rapid breathing, vomiting, irritability, anxiety, rapid pulse, and an increase or decrease in blood pressure. These symptoms typically peak within 24 to 48 hours.

12–24 hours: For heavy drinkers, but not for mild or moderate drinkers, hallucinations can occur 18 hours (+/- 6 hours) after the last drink. During withdrawal, seizures usually occur at this stage and can last up to 2 days or sometimes longer.

24–48 hours: For those with mild to moderate alcoholism, seizures may not occur at all, but the person may feel shaky. For heavy drinkers, if withdrawal-related seizures occur, it is usually at this stage. Delirium tremens (DTs) refers to a continuum of symptoms that can include confusion, loss of consciousness, hallucinations, angry or nervous behavior, soaking sweats, and disturbed sleep. DTs occur in less than 5% (i.e., 1 out of 20) of people who go through alcohol withdrawal; however, they can be fatal for up to 5% of people who develop them.

72-96 hours: Alcohol withdrawal symptoms usually improve within 5 days. However, a small number of people have withdrawal symptoms that last for weeks. Alcoholics who are also addicted to benzodiazepines may experience post-acute withdrawal symptoms (e.g., anxiety episodes or panic attacks) for a few weeks or sometimes even months. However, the assessment of withdrawal from benzodiazepine addiction is complicated by the fact that many benzodiazepine addicts have a premorbid history of generalized anxiety or panic disorder.

Post-acute withdrawal syndrome. The 2–7 days of acute withdrawal symptoms are followed by a syndrome originally known as *post-acute withdrawal syndrome* (PAWS; Gorski & Miller, 1979), which primarily affects higher-level cognitive functioning (e.g., memory, abstract thinking) and is linked to higher levels of emotionality and overreaction to stress. During this vulnerable period of time, the recovering person may feel they are on an emotional roller coaster in which minor stressors seem simply overwhelming. To use a metaphor, stepping over small molehills may feel like climbing steep mountains.

During post-acute withdrawal syndrome, relapse usually follows a consistent pattern: First, the person's attitude changes as they begin to question their well-being and ability to stay sober. Next, the person begins to use maladaptive coping methods, resulting in negative emotional consequences. Finally, the end result of this process can include a resumption of substance use (i.e., relapse).

Protracted abstinence syndrome. Another route to relapse is *protracted abstinence syndrome* (PAS; Geller, 1990), a symptom constellation opposite of that which the patient was using the drug to produce. Depending on the duration of action and the type of drug, PAS may last for weeks or even months. Relapse is higher during this period of physiological adjustment. In laboratory studies with animals, protracted abstinence syndrome is similar to Type 2 craving (see Koob, 2003).

Types of Craving. *Type I craving*, also known as *cue-based craving*, is a response to *external* environmental cues (i.e., people, places, and things), in which external stimuli trigger an internal state that is recognized as craving. Type I craving is most notable in cocaine and nicotine addiction. ***Type II craving***, also known as *state-based craving*, is a response to *internal* cues (i.e., feelings, images, and thoughts), in which internal stimuli create internal craving that emerges from difficult emotional states. Type II craving is most notable in addiction to alcohol and sedatives. In one way or the other, craving is a major risk factor leading to relapse. People who have never experienced craving—or those who have never worked closely with people who have experienced craving—do not understand addiction from this powerful experiential perspective.

Relapse is defined as a "process that occurs within the patient which manifests itself in a progressive pattern of behavior that allows the symptoms of a disease or illness to become reactivated in a person that has previously arrested those symptoms" (Gorski & Miller, 1979, p. 1). This model, developed in the context of alcoholism, focuses primarily on the physiological and neurological effects on the user.

Relapse prevention addresses both internal and external factors associated with craving. *External factors* (related to Type I craving) are addressed by "avoiding slippery people, places, and things." *Internal factors* (related to Type II craving) are addressed by managing one's internal states, such as when one is hungry, angry, lonely, or tired (HALT). Sobriety is maintained through behavioral, cognitive, emotional, and interpersonal regulation.

Sleep disturbance. Sleep disturbance is not only a persisting symptom in active alcoholism but also in early and long term recovery. Even in individuals without alcohol dependence, the short term effect of low doses of ethanol before bedtime is invariably followed by the longer term effect of sleep disturbance—albeit almost unnoticeable at first. A review of 107 behavioral studies suggests that up to 2–3 standard drinks before bedtime initially promotes sleep, but these effects diminish in as few as 3 days of continued use (Stein & Friedmann, 2005). A person uses alcohol to get to sleep will eventually develop a sleep disturbance. Like pathological drinking, the perceived short-term benefit of getting to sleep faster is grossly offset by the actual long-term consequences of chronic sleep disturbance.

Pietilä et al. (2018) compared sleep quality among research participants who consumed different levels of alcohol consumption. The findings are as follows:

Low amounts of alcohol (fewer than two drinks per day for men or one drink per day for women) are associated with decreased sleep quality by 9.3%.

Moderate amounts of alcohol (two drinks per day for men or one drink per day for women) are associated with decreased sleep quality by 24%.

High amounts of alcohol (more than two drinks per day for men or one drink per day for women) are associated with decreased sleep quality by 39.2%.

3. The Big Book: On April 10, 1939, 4,730 copies of the first edition of *Alcoholics Anonymous* were published by Works Publishing Company at $3.50 per copy. The printer, Edward Blackwell of the Cornwall Press, was told to use the thickest paper in his shop. The large, bulky volume became known as the "Big Book" and the name has stuck ever since. Because of its large size (approximately 8½ x 11 inches), the original printing of this book in 1939 was candidly described as "The Big Book." The cover of the modern hardcover book is blue, although the "Blue Book" is the popular name of the book of Narcotics Anonymous. On page 170 of *AA Comes of Age* (Alcoholics Anonymous World Services, 1975), Bill W. wrote that the idea behind the thick, large paper was to convince the alcoholic he was getting his money's worth. The second edition was published in 1955, the third edition in 1976, and the fourth edition in 2001.

4. Recovered: The word *recovered* occurs 20 times in AA literature, including 16 times in the Big Book and 4 times in *Twelve Steps and Twelve Traditions*. In contrast, the more contemporary word *recovering* occurs only 2 times (both times are in the Big Book) and the term is never used in the 12 & 12). The word recovering is used in a footnote on the first page of Chapter 8 ("To Wives"): "But many of the suggestions given here may be adapted to help the person who lives with a woman alcoholic—whether she is still drinking or is recovering in A.A." (2001, p. 104. The word recovering is used in the first sentence of the first page of Chapter 9 ("The Family Afterward"): "Our women folk have suggested certain attitudes a wife may take with the husband who is recovering" (AA Big Book, 2001, p. 122).

5. Addicts and Alcoholics: Speaking of language, it may be helpful to clarify between *person-first* and *identity-first* language. In person-first language, it is the person—not the person's disabling or chronic condition—that is emphasized. For example, person-first language would include "a person who is addicted" or "a person with a substance use disorder." This principle applies to groups of people as well (e.g. "people with alcohol use disorders" in contrast to "alcohol abusers" or "alcohol dependent individuals"). Identity-first language: In *identity-first language*, the disorder or disability becomes the focus, which allows individuals to claim the disorder and choose their identity rather than permitting others (e.g., authors, educators, researchers) to name it or to select terms with negative implications (Brown, 2011/n.d.; Brueggemann, 2013; Dunn & Andrews, 2015). Identity-first language is often used as an expression of cultural pride and reclamation of a disability that once conferred a negative identity. Identity-first language allows for constructions such as an "addicted person" whereas in person-first language, the constructions would be "person who is addicted" or "person with alcoholism." Throughout this article, identity-first language is used to emphasize and honor the preferred style used by most individuals in recovery programs (e.g., "My name is _____ and I'm an alcoholic").

6. Relapse: Relapse rates have been shown to be significantly higher in early recovery (Hunt et al., 1971; Perkinson, 2012; United States Department of Health and Human Services, 1998). Approximately one-third (33%) relapse in the first two (2) weeks following treatment. Sixty-percent (60%) relapse in the first three (3) months, which highlights the importance of 90/90 (i.e., 90 meetings in the first 90 days). Two-thirds (67%) relapse within the first 12 months. These evidence-based markers are used in the American Psychiatric Association's (2013, p. 491; 2022) definitions of early and sustained remission contained in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., text rev.; *DSM-5-TR*). The term "In early remission" refers to a time frame of at least 3 months but less than 12 months, whereas "In sustained remission" refers to a time frame of 12 months or longer. It is significant that both early and sustained remission may involve "craving, or a strong desire or urge to use alcohol" (APA, 2013, p. 491).

The chance of remaining sober for one year is related to what happens after treatment. Comprehensive Assessment and Treatment Outcome Research (CATOR) is the largest independent evaluation service for substance dependence in the United States. Since 1980,

CATOR has collected data on more than 75,000 adults and 11,000 adolescents who completed treatment. According to a CATOR report by Harrison and Hoffman (1988), approximately 50% of individuals who complete treatment (inpatient or outpatient) are able to maintain an outcome of one year of sobriety. In contrast, 70% of those who complete treatment and continue with regular AA meetings maintain one year of sobriety. A 90% chance of maintaining sobriety seems to involve treatment followed by regular AA meetings along with weekly continuing care (aka, "aftercare"):

Outcome	Modality
50%	Treatment only
70%	Treatment + regular AA meetings
90%	Treatment + regular AA + weekly aftercare

7. Longitudinal Research: George Vaillant, M.D., Professor at Harvard Medical School and Director of Research for their Department of Psychiatry, conducted two multi-decade studies of the lives of 824 men and women who were non-alcoholics at the outset, focusing on their lifelong drinking behaviors for over 60 years. This landmark longitudinal study charted drinking patterns, factors that may have contributed to alcoholism and factors that led to recovery. Vaillant concluded that alcoholism is as much a conditioned habit and social condition as it is a medical disease (1995, p. 376). Alcoholism was usually the cause—rather than the result—of co-occurring anxiety, depression, and sociopathic behavior. Based on Vaillant's observations over several decades, long-term sobriety seems to involve four factors: (1) experiencing negative consequences of drinking, such as a painful ulcer, legal problems, or loss (often known as "the law, the liver, and the lover"); (2) a less harmful, substitute dependency, such as group attendance; (3) sources of inspiration and hope, such as a religious or spiritual group; (4) new, close relationships and social support (Vaillant, 1995, pp. 241-244). Regarding the role of AA, Vaillant believed that AA and similar groups effectively harness the above four factors of healing and that many alcoholics achieve sobriety through AA. However, "Direct evidence for the efficacy of AA… remains as elusive as ever" (p. 265). It is only at the 5-year sobriety point that the relapse rate drops to nearly zero (Vaillant, 2003).

8. Operant Behavioral Theory: By definition, *reinforcement* increases a target behavior, whereas *punishment* decreases a target behavior. Technically, reinforcement and punishment are defined operationally in terms of whether a target behavior increases or decreases. *Positive reinforcement* refers to a pleasurable stimulus (a "reward") that is <u>presented</u> after a target behavior is performed and it is associated with an eventual increase in the behavior over time. *Negative reinforcement* refers to an aversive stimulus that is <u>removed</u> after a target behavior is performed and it is associated with an eventual increase in the target behavior over time. In contrast, punishment decreases a target behavior. *Positive punishment* refers to an aversive stimulus (e.g., a shock) that is presented after a target behavior is performed and it is associated with a decrease in the behavior. *Negative punishment* (sometimes termed "response cost") refers to a pleasurable stimulus that is removed or withdrawn after a target behavior is performed and it is associated with a decrease in the target behavior.

9. Definition of Disease: Merriam-Webster's dictionary provides the following definition of *disease*: "a condition of the living animal or plant body or of one of its parts that impairs normal functioning and is typically manifested by distinguishing signs and symptoms." Since 1956, the American Medical Association (AMA) has defined addiction as a primary disease; that is, one that is not caused by any other disorder. The following AMA guidelines define disease: (1) an impairment of the normal functioning of some aspect of the body, (2) characteristic signs or symptoms, and (3) harm or morbidity. By 1991, the AMA had endorsed the dual classification of alcoholism contained in both the psychiatric and medical sections of the World Health Organization's *International Classification of Diseases*.

This definition of addiction is provided by the American Society of Addiction Medicine (ASAM; 2019, p. 2):

> "Addiction is a treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual's life experiences. People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences.
> Prevention efforts and treatment approaches for addiction are generally as successful as those for other chronic diseases" (ASAM, 2019, p. 2).

10. Biaxial Model of Addiction: Based in part on Griffith Edwards' biaxial model of addiction (Edwards & Gross, 1976), I have developed and used a biaxial model of intervention. This individualized approach, with problem severity being one of the most important variables, has been described as a clinically and ethically informed approach (L. Sobell, personal communication, May 10, 2019).

In the Class Diagram depicted in Figure 1 (Doverspike, 2011, p. 97), I simply expanded on Griffith Edwards' model to illustrate (1) a horizontal or longitudinal axis of *dependence* (i.e., tolerance changes and/or predictable withdrawal symptoms upon cessation of use) that may progress over time, and (2) a vertical axis of problems (i.e., maladaptive consequences). When neither of these axes or dimensions reaches clinical significance, then there is no diagnosis. When both dimensions increase significantly, then there is addiction.

Class Diagram

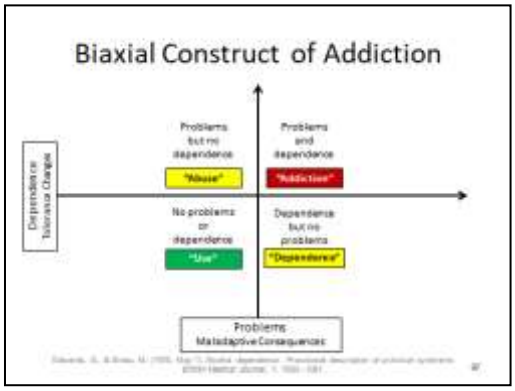

Figure 1. Biaxial Construct of Addiction

Regarding the distinction between addiction and dependence, Charles O'Brien, M.D. of the University of Pennsylvania and Nora Volkow, M.D., Director of the National Institute on Drug Abuse (NIDA), have stated that the American Psychiatric Association (APA) committee responsible for revising the *DSM-III* in the 1980s favored the term "dependence" over "addiction" by a single vote. Since that time, O'Brien, Volkow, and other psychiatrists have argued that the *DSM* conflates addiction and dependence (O'Brien & Volkow, 2006). The current DSM-5-TR (APA, 2022) continues to conflate these two constructs. In contrast, the World Health Organization's (2022) *International Classification of Diseases, 11th*

Revision (ICD-11) maintains the important distinctions among hazardous use, harmful use, and dependence. The Class Diagram depicted in Figure 2 (Doverspike, 2011, p. 98) illustrates some of these distinctions (e.g., with alcohol).

Class Diagram

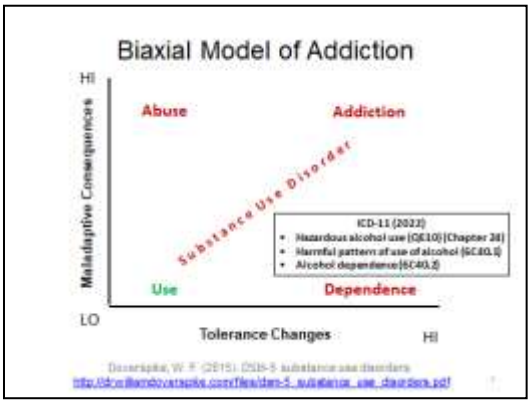

Figure 2. Conflation of Abuse, Dependence, and Addiction

Age and legal considerations aside, alcohol or substance *use* may require no intervention at all, other than basic education, knowledge, and regulation skills. Depending on the severity of consequences, substance *abuse* may include a continuum of interventions ranging from self-monitoring to controlled use to moderation management. Substance *dependence* requires withdrawal management and, to the extent that controlled use or moderation management methods have failed, abstinence-based recovery becomes the increasingly obvious treatment of choice. Substance *addiction* represents a combination of increasing tolerance to a substance along with increasing internal and external problems associated with loss of control. When addiction is present, the only viable option involves abstinence-based recovery. The Class Diagram depicted in Figure 3 (Doverspike, 2011, p. 99) illustrates when abstinence-based treatment is preferable to controlled use of a substance.

11. Abstinence vs. Controlled Use: One question that always arises is this one: "Is abstinence-based treatment always required?" The best answer is this one: "It depends."

Abstinence-Based Recovery is more likely to be the treatment of choice when these risk factors are present: alcoholic parent (especially an alcoholic father); positive family history (especially an alcoholic parent); earlier onset of drinking (especially before adolescence or puberty); older rather than younger drinker (which typically correlates with more years of drinking); presence of poor health or medical complications; more severe physical dependence (i.e., tolerance and withdrawal); episodes of loss of control, unsuccessful attempts to control use; and the presence of episodes of loss of consciousness, blackouts, brownouts, or stupor.

Controlled Use or Moderation Management may be a viable option when these factors are present: negative family history (especially non-alcoholic parents); later onset of drinking (especially after completion of myelination of prefrontal cortex, which may be age 21–24 years depending on gender); younger rather than older drinker (which typically correlates with less years of drinking); good health and absence of medical complications; no physical dependence (i.e., no tolerance or withdrawal); successful periods of self-regulated drinking; and an absence of loss of consciousness, blackouts, brownouts, or stupor.

As shown in Figure 3 (Doverspike, 2011, p. 99) abstinence-based treatment is sometimes preferable to controlled use of a substance. A more *conservative* approach to treatment focuses on abstinence-based recovery, which

may be used early rather than waiting until later with regard to possible progression of the disease. A more *liberal* approach to treatment focuses on controlled use or moderation management, which may be the preferred if the disorder has not progressed. For people who consistently control their use of alcohol, there is no reason for abstinence-based recovery—unless the person does not want to find our whether an underlying genotype might not want to find out whether the alcoholic phenotype might manifest later in life. Of course, by the time someone with a problem with alcohol comes to the attention of a professional, alcohol is likely to be the problem.

Class Diagram

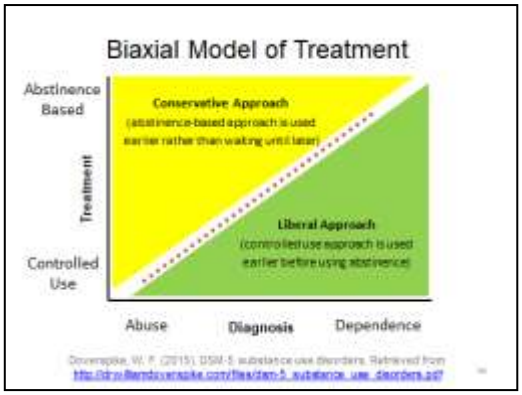

Figure 3. Conservative and Liberal Approaches to Treatment

12. Alcoholic Economics: Based on research by the economist Philip Cook (2007), approximately 30% of American adults do not drink at all, whereas another 30% consume an average of less than one drink per week. At the other end of the continuum, the top 10% of American adults—over 30 million people—consume an average of 74 drinks per week or a little more than 10 drinks per day. In other words, approximately 75% of alcohol sold in the United States is consumed by only 10% of drinkers. The top 20% of drinkers, who average about 15 drinks per week, consume 91% of all the alcohol sold in the U.S. According to Professor Cook's data, it is easy to speculate that as much as 75% of Big Alcohol's money may come from people who likely suffer from alcoholism. As an economist, Cook argues that if everyone "drank responsibly," then the large beer corporations would likely go out of business.

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