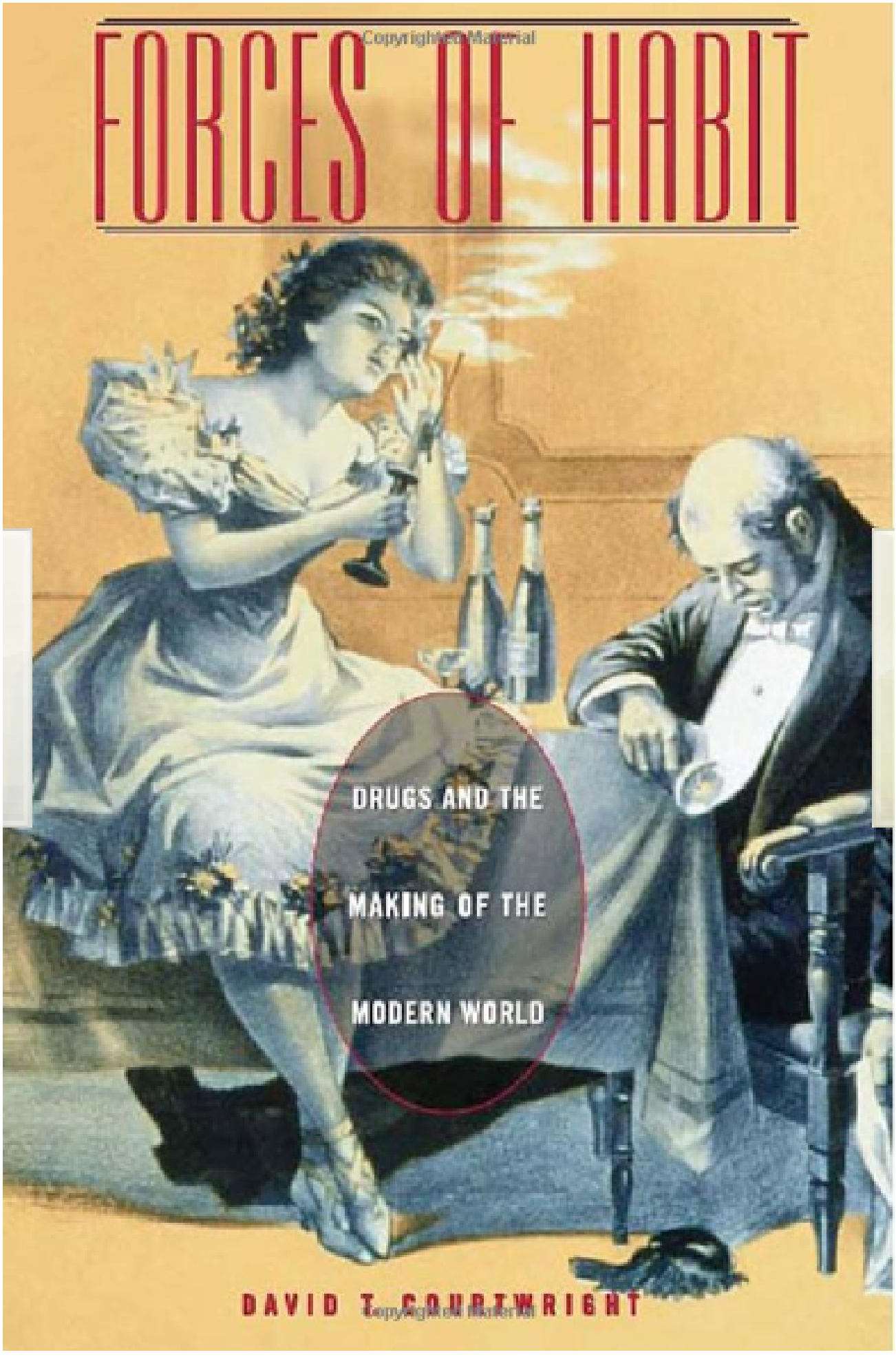
FORCES OF HABIT



DRUGS AND THE MAKING OF THE MODERN WORLD

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To my brothers Chris and Mike,
historians in their own unique ways

Problem Children," vol. 21, ser. 5 (1999): 59–86, into Chapter 4 of this book. At Duke University, Ellen Gartrell, Elizabeth Dunn, and Gary Boye steered me to valuable holdings in the Special Collections Library. Mort Goren, Rosemary Russo, Lavonne Wienke, Daphne Joseph, and Nora Beecher assisted me at (and often escorted me to) the Drug Enforcement Administration Library in Arlington, Virginia.

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Contents

Introduction

The Psychoactive Revolution

On July 13, 1926, Anthony Colombo, a man of many habits, all of them bad, checked into the Philadelphia General Hospital. The staff assigned him to the drug ward—a good choice, considering that each day of his life he smoked a quarter-ounce of opium, puffed 80 cigarettes, drank two cups of coffee or tea, and downed a quart of whiskey. He got drunk nearly every day, he explained to an intern. He had begun smoking the opium to sober up.

But he didn't use the hard stuff. No cocaine. No barbiturates. "No narcotics other than opium"—a lie betrayed by his upper arms and thighs, pitted with the scars of hypodermic abscesses. Or perhaps it was a white lie. Opium smokers looked down on needle users in those days. Colombo had his pride to consider.

He was, after all, a working man. Addiction to opium had affected neither his will power, he boasted, nor his ability to work. He was in the liquor business, he said—a striking admission from the citizen of a country that did not, in 1926, officially have a liquor business.

The opium habit did not affect his appetite, the intern noted. Just 33 years of age, Colombo tipped the scales at 275 pounds. "The chest is immense," he wrote; "the abdomen is large and pendulous." Considering Colombo's weight, his "three to five meals daily," his opium, his four score cigarettes, his coffee, his tea, and his whiskey, some form of gratification must have been passing through his mouth practically every waking moment. Indeed,

Colombo led a life—probably not a long life—of such continuous and varied stimulation and psychoactive pleasure that no emperor, no despot, no potentate of the ancient world, however wealthy, determined, or decadent, could have matched it.[1]

Yet Anthony Colombo was a lowly man, a petty bootlegger of modest means. It was his luck, or misfortune, to live in the twentieth century, in an industrial city in an industrial nation that had, in its brief history, managed to refine and mass-market an impressive array of psychoactive pleasures. By the time Colombo checked into the hospital, millions of ordinary people throughout the world could lead, in neurochemical terms, a life-style unimaginable for even the wealthiest five hundred years earlier.

I call this development the psychoactive revolution. People everywhere have acquired progressively more, and more potent, means of altering their ordinary waking consciousness. One of the signal events of world history, this development had its roots in the transoceanic commerce and empire building of the early modern period—that is, the years from about 1500 to 1789. *Forces of Habit* describes how early modern merchants, planters, and other imperial elites succeeded in bringing about the confluence of the world's psychoactive resources and then explores why, despite enormous profits and tax revenues, their successors changed their minds and restricted or prohibited many—but not all—drugs.

The term "drugs" is an extremely problematic one, connoting such things as abuse and addiction. For all its baggage, the word has one great virtue. It is short. Indeed, one of the reasons its use persisted, over the objections of offended pharmacists, was that headline writers needed something pithier than "narcotic drugs." In this book I use "drugs" as a convenient and neutral term of reference for a long list of psychoactive substances, licit or illicit, mild or potent, deployed for medical and nonmedical purposes. Alcoholic and caffeinated beverages, cannabis, coca, cocaine, opium, morphine, and tobacco are all drugs in this sense, as are heroin, methamphetamine, and many other semisynthetic and synthetic substances. None is inherently evil. All can be abused. All are sources of profit. All have become, or at least have the potential to become, global commodities.[2]

This might not be apparent from a casual inspection of drug histories. Most scholarship deals with particular drugs or types of drugs in a particular setting: tea in Japan, vodka in Russia, narcotics in America, and so on. I have tried to connect these scholarly dots, linking the many separate histories in a big-picture narrative of the discovery, interchange, and exploitation of the

planet's psychoactive resources. I aim to do for drugs what William McNeill did for diseases in *Plagues and Peoples* (1976), a world-historical study of the exchange of microorganisms and its impact on civilizations. Disease and drug exchanges have many close parallels. That imported alcohol, for example, acted as a deadly pathogen for indigenous peoples is more than a metaphor. But there are also important differences. McNeill's story was largely one of tragic happenstance. Invisible germs spread by human contact had lethal but usually unintended consequences. The spread of drug cultivation and manufacturing, however, was anything but accidental. It depended on conscious human enterprise, and only secondarily on unconscious biological processes.

The book's first section describes the confluence of the world's principal psychoactive resources, concentrating on alcoholic and caffeinated beverages, tobacco, opiates, cannabis, coca, cocaine, and sugar—the last a key ingredient in many drug products. These substances, once geographically confined, all entered the stream of global commerce, though at different times and from different places. Coffee, for example, spread from Ethiopia, where the bush was indigenous, to Arabia, and then throughout the Islamic lands and Christian Europe. Europeans took the taste and the beans to the Americas, which produced 70 percent of the world's coffee crop by the late nineteenth century.[3] European farmers and planters, employing indentured and slave labor, enjoyed great success cultivating drug crops in both hemispheres. Their collective efforts expanded world supply, drove down prices, and drew millions of less affluent purchasers into the market, democratizing drug consumption.

But not for all drugs. Embedded in the story of psychoactive commerce is a mystery, one that is often overlooked. A number of regionally popular plant drugs—kava, betel, qat, peyote—failed to become commodities in both hemispheres in the way that wine or opium did. Global drug commerce, propelled by European overseas expansion, was highly selective. For reasons that ranged from limited shelf life to cultural biases against their effects, Europeans chose to ignore or suppress many novel psychoactive plants. The ones they found useful and acceptable they traded and cultivated throughout the world, with social and environmental consequences that are still very much in evidence.

The second section, on drugs and commerce, deals with psychoactive substances as medical and recreational products. Drugs typically began their careers as expensive and rarefied medicines, touted for a variety of human and

animal ailments. Once their pleasurable and consciousness-altering properties became known, they escaped the therapeutic realm and entered that of popular consumption. As they did so, their political status changed. Widespread nonmedical use of spirits, tobacco, amphetamines, and other psychoactive substances occasioned controversy, alarm, and official intervention. All large-scale societies differentiated in some way between the medical use and the nonmedical abuse of drugs, and eventually they made this distinction the moral and legal foundation for the international drug control system.

Such a system was necessary because drugs were at once dangerous and lucrative products. The opposite of "durable goods," they were quickly consumed and had to be just as quickly replaced by those dependent on them. Regular users needed larger doses to experience the original effect, which meant that the volume of sales was likely to increase. Inventions such as improved stills, hypodermic syringes, and blended cigarettes made for more efficient, speedier, and more profitable ways to get refined chemicals into consumers' brains. Competition sparked further innovation and widespread advertising, as manufacturers sought to cut their costs, increase market share, and enhance the appeal of their products. As drugs became cheaper and more seductive, they attracted millions of new users, generating profitable opportunities in enterprises ranging from addiction treatment to Zippo lighters. Drug commerce and its externalities were manifestations of mature capitalism's limbic turn, its increasing focus on pleasure and emotional gratification, as opposed to consumers' material needs. Drug commerce, to paraphrase the anthropologist Robert Ardrey, flourished in a world in which the hungry psyche was replacing the hungry belly.[4]

The third section, which concerns drugs and power, shows how psychoactive trade benefited mercantile and imperial elites in ways that went beyond ordinary commercial profits. These elites quickly discovered that they could use drugs to control manual laborers and exploit indigenes. Opium, for instance, kept Chinese laborers in a state of debt and dependency. Alcohol induced native peoples to trade their furs, sell their captives into slavery, and negotiate away their lands. Early modern political elites found drugs to be dependable sources of revenue. Though rulers were often initially hostile to novel drugs (tobacco struck them as an especially nasty foreign vice, provoking sanctions from royal denunciations to ritual executions), they bowed to the inevitable and imposed taxes or their equivalents, monopolies, on the expanding commerce. They prospered beyond their dreams. By 1885 taxes on

alcohol, tobacco, and tea accounted for close to half of the British government's gross income. Drug taxation was the fiscal cornerstone of the modern state, and the chief financial prop of European colonial empires.[5]

Political elites do not ordinarily kill the geese that lay their golden eggs. Yet, during the last hundred years, they have selectively abandoned a policy of taxed, legal commerce for one of greater restriction and prohibition, achieved by domestic legislation and international treaties. The final chapters explore the modernizing pressures, medical developments, and political maneuvers that prompted so many governments to reverse course, and why they did so for some drugs rather than others. The psychoactive counterrevolution was strikingly erratic. Its legacy is a world in which (for now) tobacco and liquor are easily and legally available, while drugs like cannabis or heroin are generally not.

Writing world history is like peering through a microscope with a low-powered lens. The observer can see a good deal of the specimen, but only by sacrificing detail. One way to avoid this problem, and the narrative monotony it entails, is to periodically zoom in on a particular episode or personality, and then back out to the larger picture. That, at any rate, is my narrative strategy. Generalizations culled from the historical, social scientific, and scientific literature are fleshed out with specific examples and—dialing up the power further—several case studies. Among these are the democratization of amphetamines, James Duke and the cigarette industry, alcohol taxation in India, and the failure of prohibition in the Soviet Union. Each of these cases serves as a kind of parable, illustrating principles important to drug history.

The subject and my approach to it require selectivity. I have concentrated on identifying and illustrating the most significant trends of the past 500 years, and have made no attempt to provide comprehensive histories of all psychoactive drugs. That task, rendered impossible by the weight of numbers, has been beyond the capability of any one person since Louis Lewin, the pioneering German psychopharmacologist, died in 1929. I should add that I have cited only a fraction of the voluminous literature on drugs. The reader will discover, however, that my documentation is not ungenerous, and will find in it many leads to the outstanding specialized scholarship on the role and impact of drugs in the modern world.

PART I

THE CONFLUENCE OF PSYCHOACTIVE RESOURCES

psychoactive novelty over the last hundred years has been and will continue to be the introduction of synthetic drugs by multinational pharmaceutical companies. Psychiatry's biological turn and the rise of "cosmetic psychopharmacology," the prescription of profitable new drugs to fine-tune mood and improve performance, assure the continued introduction of "clean" synthetic alternatives to natural drugs. Inevitably, some of these products will find their way into the drug underworld.

PART II

DRUGS AND COMMERCE

4

The Sorcerer's Apprentices

Only drugs that were widely used in western societies became global commodities. In no case, however, did novel psychoactive substances immediately become objects of popular consumption in Europe or North America. They began their careers as exotic medicines, about which physicians made heated claims and counterclaims. These intramural disputes seldom attracted official notice. Not until drugs began to be widely used in nonmedical contexts did they generate public controversy and state intervention. The story of the reception of new plant drugs, as well as the creation of wholly synthetic ones, is that of the sorcerer's apprentice. Again and again, promising new drug therapies slipped the bonds of medical discourse and control. They escaped into a larger realm of popular pleasure and mischief, prompting responses by national and international authorities.

An Hearbe of Great Estimation

It is an axiom of scientific medicine that particular diseases should be treated by particular medicines whose use has been justified by statistical studies. However, the principle of therapeutic specificity did not emerge (and then only gradually) until the nineteenth century. For most of medical history, doctors regarded drugs simply as tools to achieve broad physiological effects. Through such actions as quickening the pulse or regulating the bowels, they supposedly helped the body regain its natural balance. Seldom did physi-

cians restrict a particular drug to a single illness. Quinine, for example, was an all-purpose tonic, not just a specific treatment for malaria. New drugs with pronounced effects were almost automatic candidates for medical curiosity and enthusiasm.[1]

This was especially true if physicians could administer them in a variety of ways. The Seville physician Nicolas Monardes, a student of New World drugs who published a seminal and widely translated work on tobacco in 1571, wrote that, applied topically, tobacco could heal all manner of wounds, sores, and aches. Taken internally, it acted as a vermifuge. Chewed, it allayed hunger and thirst; smoked, it overcame fatigue. Monardes noted that Indians also smoked as a "pastyme," reveling in tobacco drunkenness and diabolical visions. He was emphatic in his disapproval of these practices. From the start, moral lines were being drawn.[2]

Tobacco soon acquired a reputation as a "great Antidote against all venome and pestilential diseases," able to cleanse the air and disperse the poisonous "vapors" responsible for plague. "This day," the diarist Samuel Pepys wrote on June 7, 1665, "much against my Will, I did in Drury-lane see two or three houses marked with a red cross upon the doors, and 'Lord have mercy upon us' writ there—which was a sad sight to me, being the first of that kind that to my remembrance I ever saw. It put me into an ill conception of myself and my smell, so that I was forced to buy some roll-tobacco to smell to [*sic*] and chaw—which took away the apprehension." No London tobacconist, legend has it, ever succumbed to the Great Plague.[3]

Medical interest in and enthusiasm for Monardes's "hearbe of great estimation" peaked around 1600. While doctors were debating the means of administration and refining the indications for tobacco, sailors, soldiers, and men-about-town were smoking for their own pleasure, and urging their tavernmates to do the same. As the supply expanded in the seventeenth century, and the practice became more general, many physicians grew alarmed by what they saw as the abuse of tobacco. One of the most interesting polemics came from the pen of the Danish court physician and academician Simon Paulli, who published his *Commentarius de Abusu Tabaci . . . et Herbae Theé* in 1665. Tobacco was valuable for its heating and drying properties, Paulli conceded, and had many uses as an infusion, syrup, or ointment. But when sniffed or especially smoked, it was "intolerable, and highly noxious." Tobacco smoke poisoned the brain and drained the purse. Foolish men smoked inordinate quantities, "whilst, perhaps, their Families are starving at

Home. . . Such is the Madness of some *Europeans*, that they will, for a Trifle, dispose of their Goods, in order to gratify themselves with *Tobacco*."

Paulli was a cosmopolitan with a wide knowledge of botany and many continental correspondents. He knew that tobacco was only one of many new drugs entering European medicine and commerce. Crediting as sincere reports that drinking chocolate, coffee, and above all tea produced healthful benefits, he pointed out that only those who lived in the plants' native regions were likely to enjoy these benefits. "The natural Produce of any Country is best suited to the Constitution of its Inhabitants," he argued, invoking an ancient medical maxim. Tea was best for the Chinese, coffee for Persians, chocolate for American Indians, and ale and wine for Europeans. Violating the natural order by mixing drugs and peoples had debilitating consequences, sterility among them. The importation of these products was wasteful as well as dangerous, as Europeans already had plants that yielded the desired effects. Spending immense sums for stale and adulterated foreign equivalents was "raging epidemical Madness"—especially in a country like Denmark, which had no drug-producing colonies of its own. Besides, why should Europeans ape base and cunning Asiatics, not to say the very Indian cannibals who had infected them with syphilis, and were doing so again with smoking? It was a shame, Paulli exhorted, "that we *Europeans* should thus brutally follow the Custom of the *Barbarians*, without listening to Reason, in which we so far excel them."[4]

Within the pages of Paulli's little book lie every one of the principal reasons why governments would one day assert control over or prohibit the use of certain drugs. They brought harm to those who abused them, misery to their families, and danger to their communities. They drained the resources of individuals and states. They were vices which originated with demonic others. Even the notion that drugs did not travel well, and could disrupt societies unfamiliar with them, survived as a commonplace of social science, though for reasons more anthropological than Hippocratic.

What also persisted was Paulli's distinction between tobacco as an occasional medicine, beneficent when the right people used it in the right circumstances, and tobacco as a habitual form of self-indulgence. Article titles and organization names concisely demonstrate the persistence of this distinction well into the nineteenth century: The effects of tobacco *when used as a luxury.* Is tobacco a good thing, *otherwise than as a medicine?* L'Association Française Contre *l'Abus* du Tabac. Deadly poison that it could be, critics

conceded that tobacco had its uses, such as treating spasmodic asthma. Salvador Ruiz Blasco, a Spanish physician, once revived a stillborn child by blowing cigar smoke upon it. The motionless infant stirred, made a face, and began to cry. He was christened Pablo Picasso.[5]

Even today, long after tobacco has acquired a lethal reputation, nicotine retains some important therapeutic applications. Observing that the smoking rate in schizophrenics is as high as 80 percent, researchers have established that nicotine calms the agitating symptoms of the disease. It also mitigates the side effects of antipsychotic drugs prescribed to treat schizophrenia. Edward Levin has raised the possibility of switching schizophrenic smokers to nicotine patches, a suggestion that Paulli would have approved. Research, some of it sponsored by tobacco companies, is under way to investigate the use of nicotine and related compounds as a treatment for Alzheimer's and Parkinson's diseases, depression, attention deficit hyperactivity disorder, Tourette's Syndrome, and ulcerative colitis.[6]

A Most Excellent Thing

Wine was among the most ancient of medicines, employed therapeutically in all societies possessing viticulture. Greek and Roman physicians recommended it as wound dressing, fever fighter, diuretic, and restorative beverage. The Talmud says that "wine taken in moderation induces appetite and is beneficial to health. . . . Wine is the greatest of medicines." Wine and beer were commonly used as vehicles for other plant drugs, a practice that dates to the Ebers papyrus of about 1550 B.C. Medicated drinks were almost universal in medieval and early modern Europe. "To Procure easie Labour," ran a typical English recipe, "Take 3 spoonfulls of Oyle of Sweet Almonds in halfe a Pinte of white Wine every morning for 6 weeks together before the time of Delivery it is a most excellent thing." Cotton Mather, the Massachusetts clergyman-physician, recommended pulverized Green Turtle's penis in beer, ale, or white wine as a speedy cure for kidney stones.[7]

Before the seventeenth century, distilled alcohol was expensive, typically sold in apothecaries' shops, and reverently regarded as a life-giving "miracle," capable of dispelling everything from plague to melancholy. *Aqua vitae*, as brandy was called, means "water of life." (Likewise whiskey, which derives from the Gaelic *uisge beatha*.) Those who took a half spoonful of brandy every morning, declared one physician, would never be ill. Though couched in less enthusiastic terms, modern epidemiological studies have shown that

the antiseptic properties of spirits confer protection against food-borne diseases like hepatitis.[8]

As with tobacco, physicians debated alcohol's therapeutic uses, a debate that turned heated in the late eighteenth and early nineteenth centuries. Few doubted, however, that it could be a lifesaving stimulant. "Alcohol, in full doses, seems to act as an absolute specific in snake poison, by overcoming the paralysed state of the heart and forcing it quickly to resume its natural action," wrote the Australian physician Julius Berncastle. His prescription: a wine glass full of brandy every quarter-hour until cured. Thomas Hicks, who essentially outlasted his competitors to win the 1904 Olympic marathon, took strychnine and brandy during the race to combat his exhaustion. The dubiousness of this (then-legal) tactic may be inferred from Hicks's time. It was 3 hours and 28 minutes, roughly an 8-minute-per-mile pace.[9]

Drinking spirits as a form of dissipation was an entirely different matter, and recognized as such long before Hicks staggered across the finish line. The historian Ann Tlusty, who has studied Augsburg's sixteenth- and seventeenth-century statutes on spirits, has shown how stubbornly authorities tried to enforce the distinction. "Brandy is not a drink to be taken immoderately," a 1614 regulation declared, "but only for strength or medicinal purposes." Brandysellers' customers had to take their medicine standing up and on the premises, rather like methadone patients three and a half centuries later. They could not drink brandy in taverns or other recreational settings. The strictures on gin, suspect as a waste of grain as well as a potent source of intoxication, were tighter still. Only four licensed apothecaries could sell grain alcohol for medicinal purposes. Popular demand, however, gradually undermined the regime. Soldiers demanded their brandy; widows and poor craftsmen distilled gin on the sly. Faced with persistent resistance and evasion, the city council finally acquiesced to taxed, nonmedical consumption, first of brandy, then of gin. Both were fully legal by 1683.[10]

One of gin's attractions was its cheapness. Its low price relative to beer and ale triggered a gin-drinking epidemic in early eighteenth-century England, immortalized in William Hogarth's *Gin Lane* and *Beer Street*. Writers such as Tobias Smollett and Henry Fielding—the former a physician, the latter a magistrate—denounced it as a new and unprecedentedly dangerous kind of drunkenness. Gin, complained Smollett, "was sold so cheap that the lowest class of the people could afford to indulge themselves in one continued state of intoxication, to the destruction of all morals, industry, and order. Such a

This 1894 whiskey advertisement cleverly evokes alcohol's venerable medical heritage. Even strict temperance families kept a bottle handy for medical emergencies such as fainting spells. Some radical prohibitionists, however, came to regard sales of medicinal spirits as a cynical dodge. In 1903 Blanche Boise, a disciple of Carrie Nation, made a point of smashing the windows of Topeka drugstores selling liquor, as well as those of saloons. The year before she had horsewhipped the mayor for winking at the liquor traffic.

shameful degree of profligacy prevailed that the retailers of this poisonous compound set up painted boards in public, inviting people to be drunk for the small expense of one penny; assuring them they might be dead drunk for two-pence, and have straw for nothing."

That this famous story was apocryphal and discredited soon after it appeared is beside the political point. Gin binges inspired anxiety among the respectable. They were, wrote Fielding, a direct cause of crime. They rendered men unable to work while destroying their sense of fear and shame. The results were theft and robbery—witness the parade of felons brought before him. And what, he wondered, would become of children conceived in gin? "Are these wretched Infants (if such can be supposed capable of arriving at the Age of Maturity) to become our future Sailors, and our future Grenadiers?" Like Paulli, who feared tobacco and caffeinated beverages as racial poisons, Fielding saw cheap gin as a threat to the future of the nation. So did Parliament, which in 1751 substantially increased licensing fees and requirements and imposed higher duties on spirits.[11]

Alarms over national fitness and security played a similar role in the fall of absinthe. Made by dissolving wormwood in alcohol with anise and other flavoring agents, this pale emerald-green drink contained the hallucinogen thujone. Although best remembered as a favorite tipple of poets and painters—Henri de Toulouse-Lautrec carried his supply with him in a custom-built cane—absinthe enjoyed growing popularity during the nineteenth century, particularly in France, where consumption reached 36 million liters a year by 1910. Advertising and mass production were the keys. The Pernod factory at Pontarlier was so efficient that only 170 employees, half of them women, could turn out 125,000 liters a day—bottled, corked, labeled, and packed in crates destined for ports as far-flung as Valparaiso, San Francisco, and Saigon. But temperance agitation and fears that absinthe drinking contributed to tuberculosis, epilepsy, heritable insanity, and crime led to bans in Switzerland, the United States, and other countries. The French government, concerned with military readiness and morale, issued an emergency decree against sales in August 1914. The following year the Chamber of Deputies formally outlawed all production, distribution, and sale.

Yet the prehistory of absinthe—the ancient use of wormwood, often with alcohol, as a medicine—presents a completely different picture. The plant was used in the treatment of intestinal worms (hence the name), fevers, epilepsy, and gout. Some believe that wormwood rather than opium was the drug offered to Jesus on the cross. Mixed with white wine and spices, it

Death pours another round while dangling an absinthe drinker by a string. This 1883 U.S. cartoon neatly combines three classic anti-drug themes: loss of control, loss of mind, and loss of life. Note also the reference to absinthe's foreign origins.

warded off contagion. Winemakers added sprigs to prevent spoilage. *Wermut*, whence our Vermouth, is the German word for wormwood. Wet nurses applied its bitter oil to their nipples to wean suckling babies. None of this was in the least controversial.[12]

Amphetamine Democracies

Four medical developments in the nineteenth century accelerated the psychoactive revolution and increased anxieties about its social consequences. These were the isolation and commercial production of psychoactive alkaloids such as morphine and cocaine; the development of hypodermic medication; the discovery and manufacture of synthetic drugs such as chloral hydrate; and the discovery and manufacture of semisynthetic derivatives such as heroin. Heroin is in the "semi" class because its basic ingredient is simply the morphine molecule, to which two small acetyl groups have been added, tripling its potency and speeding the onset of its action. Clinical trials of heroin and other experimental drugs demonstrated that small changes in molecular structure could produce large changes in effects. This principle revolutionized pharmacology and paved the way for the development of countless new medications, many with psychoactive properties.

Most synthetic and semisynthetic drugs originated in Germany, the center of pharmaceutical research and development during the late nineteenth and early twentieth centuries. One firm alone, Friedrich Bayer & Co. of Elberfeld, sold or licensed the manufacture of such sedatives and hypnotics as Luminal, Sulfonal, Trional, and Veronal, as well as its two best-known products, heroin and aspirin. (The company immodestly titled one of its publications *Materia Medica Bayer.*) Grateful doctors avidly purchased the sleep-inducing drugs; one Canadian practitioner bought them in 5,000-tablet lots. They soon learned, however, that barbiturates and other new drugs could mean trouble. One reason the word "drug" became associated with addiction in the early twentieth century was that physicians needed a term of convenience to link together the proliferating substance-abuse problems, much the way "cancer" described disparate forms of malignancy. "Drug habit" filled the bill.[13]

Cut off from German supplies and technology, the British and American pharmaceutical industries experienced hothouse growth during World War I. The American industry emerged as the world leader during and after World War II. More than 61 percent of new single-chemical drugs introduced from 1941 through 1963 originated in the United States, compared with 8 percent for Switzerland, 6 percent for Germany, 5 percent for Britain, and 3.5 percent for France. Whatever the country of origin, pharmaceutical companies marketed these products internationally, domestic sales being insufficient to recoup the large research and development costs. Those that had pleasurable or libidinal effects followed a trajectory similar to that of their organic predecessors. As they leaked from medical to popular experimentation and use, they engendered controversy and tightened control. This was true of heroin, barbiturates, anabolic steroids, tranquilizers, hallucinogens, synthetic narcotics like Demerol, and even, to cite a recent instance, Viagra, which prompted editorial head-wagging the moment it went from a treatment for erectile dysfunction to an experimental aphrodisiac. Similar

controversies have erupted when nonmedical products have been used as intoxicants, for example, gasoline or glue sniffing. The sheer range of psychoactive chemicals available in the industrial environment is one of the main reasons why, in recent years, the terms "substance abuse" and "chemical dependency" have gained currency, being even more capacious than "drug abuse" or "addiction."[14]

The history of the amphetamines is particularly instructive. A group of related drugs whose molecular structures resemble adrenaline, the amphetamines stimulate both the sympathetic and central nervous systems, producing heightened alertness, wakefulness, and loss of appetite. Like cocaine, they increase the availability of dopamine, a neurotransmitter important in the brain's reward system. Methamphetamine is a potent and easily synthesized form of the drug popular with illicit manufacturers around the world. Users can swallow it or inject it like cocaine. They can also smoke high-purity methamphetamine crystals. Compared with crack cocaine, the effects of "ice" persist for hours rather than minutes. Chronic use leads to psychosis. It is a formidable drug.[15]

Amphetamine's first commercial use, however, was as a decongestant. Like heroin, which Bayer originally promoted as a cough suppressant, amphetamine was marketed by the Philadelphia firm of Smith, Kline, and French (SKF) for quick relief from cold symptoms. It was the base ingredient in their over-the-counter Benzedrine inhaler, introduced in 1932. When those who used the inhalers experienced stimulating, insomniac, and anorectic effects, it seemed that the drug might also prove effective against fatigue, narcolepsy, obesity, and other conditions. By 1946, according to one count, amphetamine had 39 indications, including such disparate conditions as low blood pressure, seasickness, chronic hiccups, and caffeine dependence.

College students found out for themselves that if they took amphetamine they did not need coffee. In 1936 University of Minnesota students, guinea pigs in experiments, quickly perceived the drug's utility for all-night parties and exam blitzes. (Human subjects in psilocybin and LSD trials in the 1950s and early 1960s would glimpse more cosmic possibilities.) Word of "brain" and "pep" pills spread to Wisconsin, Columbia, Chicago, and Purdue. Athletes, teamsters, and racehorse trainers got in on the act. So did the U.S. military, which issued upwards of 180 million tablets and pills to bomber crews and jungle fighters during World War II.[16]

The expiration of SKF's original amphetamine patents in 1949 brought new firms into the market. U.S. amphetamine production, 16,000 pounds in 1949, rose to 75,000 pounds in 1958, equal to 3.5 billion tablets. Nonmedical consumption accounted for half or more. In the 1950s, years not ordinarily associated with drug abuse in American history, an "amphetamine democracy" arose and spread rapidly. It included long-haul truck drivers, veterans, prisoners, students, teenage dabblers, and highflying celebrities. Max Jacobson, a notorious "Dr. Feelgood" whose patients included Yul Brynner, Alan Jay Lerner, and Johnny Mathis, injected John Kennedy with Dexedrine before his historic televised debates with Richard Nixon. By the mid-1960s, when production had reached 8 billion tablets a year, a flourishing amphetamine subculture was feeding off forged prescriptions, bogus wholesale orders, and other diversion tactics.[17]

Prescriptions were not even necessary. "I met a freak at the Hollywood Public Library," wrote James Ellroy, recalling his early life as a thief and drifter. "He told me about Benzedrex inhalers."

> They were an over-the-counter decongestant product encased in little plastic tubes. The tubes held a wad of cotton soaked in a substance called propylhexedrine. You were supposed to stick the tube in your nose and take a few sniffs. You *weren't* supposed to swallow the wads and fly on righteous ten-hour speed highs.
>
> Benzedrex inhalers were legal. They cost 69 cents. You could buy them or boost them all over L.A.
>
> The freak said I should steal a few. I dug the idea. I could tap into a speed source without dope connections or a doctor's prescription. I stole three inhalers at a Sav-On drugstore and hunkered down to chase them with root beer.
>
> The wads were two inches long and of cigarette circumference. They were soaked in an evil-smelling amber solution. I gagged one down and fought a reflex to heave it back up. It stayed down and went to work inside half an hour.
>
> The high was *goooooood*. It was brain-popping and groin-grabbing. It was just as good as a pharmaceutical-upper high.
>
> I went back to my spot in Robert Burns Park and jacked off all night. The high lasted eight solid hours and left me dingy and schizzy. T-bird took the edge off and eased me into a fresh euphoria.

I'd found something. It was something I could have at will. I went at it willfully.

This is an archetypal story of amphetamine abuse. A tip from a disreputable source. Diversion by theft. A bad initial reaction followed by a powerful high—Ellroy had swallowed the equivalent of 25 10-milligram tablets. He brought himself down with other drugs. T-bird is Thunderbird, a cheap wine. He kept using and built up a huge propylhexedrine tolerance, taking ten to twelve cotton wads at a time. Monsters jumped out of the toilet. Ellroy made a deal with God. "I told him I wouldn't drink or pop inhalers. I told him I wouldn't steal. All I wanted was my mind back for keeps." He quit alcohol and amphetamine, experimented with marijuana maintenance, then joined Alcoholics Anonymous. Westside AA swung hard in the late 1970s: "Hot Tub Fever" after meetings and nude pool parties. It worked anyway. Ellroy stayed clean and became a famous L.A. crime writer.[18]

This was not the sort of odyssey SKF had in mind for its consumers. The company tried various tricks to prevent abuse, such as adding denatured picric acid to discourage wick-eating. Determined users simply endured the bitter taste and nausea to get the high. Yet even if SKF and its imitators had succeeded in designing abuse-proof inhalers, the amphetamine democracy would still have taken root. They promoted the drug so aggressively for so many conditions that leakage was bound to occur.

Pharmaceutical detail men plied doctors with free samples and expensive brochures. "Fat people die first," proclaimed one, underscoring the point with anatomical renderings of fatty hearts and greasy livers. "Few therapeutic regimens have been adopted so widely, so quickly and with such generally satisfying results as the use of 'Dexedrine' sulfate in weight control." Dexamyl, an amphetamine-barbiturate combination, was just the thing for "the management of everyday mental and emotional distress," including patients experiencing money problems, family strife, anxiety over aging, bereavement, or spells of frustration. In other words, all of us. As late as 1953 SKF's official *Dexedrine Reference Manual* denied the possibility of addiction, conceding only and grudgingly that psychic "habituation" might occur in certain patients—but then "habituation may occur to pink water."[19]

When doctors treat a host of vague complaints by handing out powerful drugs flying the false colors of safety, they act as the sorcerer's apprentices. Some patients, invariably a minority, decide they can continue taking the

medicine for other purposes. After all, it can't do any harm. They urge it on their friends. It helped my blues, my hangover, my fatigue, my weight problem, my sex life; it will help yours. Those who continue using get their supplies from physicians, concocting various stories to obtain prescriptions, or purchase directly from profiteering pharmacists and other illegal suppliers. Extramedical use evolves out of authorized medical use in a process of parallel chain reactions. The more pharmaceutical companies promote a drug and the more physicians prescribe it, the more parallel chains are set in motion and the sooner the drug is democratized.

Which eventually brings official intervention. In the case of the amphetamines, the hammer fell in 1971 when the federal government, alarmed by rising production (then 12 billion tablets annually) and the growing methamphetamine-based injection subculture, announced strict manufacturing quotas. Users could still purchase pharmaceutical amphetamine on the black market, though they ran an increasing risk of being cheated with "look-alike" products—counterfeit mixtures of caffeine, ephedrine, or other stimulant drugs. Clandestine methamphetamine laboratories, which filled the vacuum created by the federal crackdown on diversion, supplied the real thing.[20]

As it happened, 1971 was also the year in which the French banned Corydrane, an over-the-counter preparation marketed by Delagrange Laboratories. Each tube of twenty tablets contained 50 milligrams of aspirin and 144 milligrams of racemic amphetamine. The stated indications were for influenza, coryza, algia, and asthenia, the last two terms broadly referring to "pain" and "weakness." Corydrane was soon popular with customers other than those suffering from flu and runny noses. Men took it as an aphrodisiac; cyclists boosted their energy; students, artists, and intellectuals stoked their creative fires. Jean-Paul Sartre wrote his *Critique de la Raison Dialectique* (1960) on a diet of coffee, tea, cigarettes, pipe tobacco, alcohol, barbiturates, and Corydrane tablets, which he chewed like candy. The book was a prolix dud. Interestingly, when Sartre composed his more enduring literary works, he shunned all synthetic drugs, confining himself to a thermos of strong tea.[21]

The Japanese cracked down on pharmaceutical amphetamines much sooner than the French or the Americans; they consequently experienced an earlier shift to purely illicit supplies. During World War II Japanese soldiers and aviators used methamphetamine to sustain their *senryoku*, "war strength" or "war energy." Construction and munitions workers took the drug in a

doomed attempt to keep up production in the face of incendiary raids and mounting labor shortages. In 1945 manufacturers began cleaning out stocks of war-surplus ampules, advertising them with such slogans as "elimination of drowsiness and repletion of the spirit." They were available at low cost, without prescription, and in an atmosphere of demoralization and weakened social controls.

Japanese physicians began seeing cases of amphetamine addiction in 1946. Most of the addicts were young men from slum districts, often of Korean or Chinese ancestry. No social group was entirely exempt, however, nor was dissipation necessarily the leading motive for nonmedical use. Stimulant drugs (not excepting caffeinated beverages) have intrinsic appeal in high-pressure, work-oriented societies like Japan's. "Japan is the type of society that needs methamphetamine," explained one longtime Tokyo resident. "The treadmill is very fast and people use it to stay on." Survey findings bear out the anecdote. In 1955 only 14 percent of current Japanese amphetamine users listed pleasure as the reason for beginning use of the drug. Night work and study accounted for 26 percent of users, curiosity 26 percent, peer endorsement 28 percent, and "despair" 5 percent.

As the amphetamine epidemic gained momentum, the Japanese government enacted progressively stricter measures governing advertising and availability and increased penalties for illicit manufacture and sale. In January 1955, when there were some two million users in the country, it launched a comprehensive national educational campaign. Slide shows, posters, and community meetings alerted the populace to the dangers of stimulants. The government mandated treatment and drastically increased the number of psychiatric beds available for addicts. This campaign—one of the first modern, multi-front drug wars—succeeded in ending the wave of postwar amphetamine abuse.[22]

Unfortunately, drug abuse in nations, like addiction in individuals, is a chronic relapsing disorder. "To say the Truth," wrote Fielding, "bad Habits in the Body Politic, especially if of any Duration, are seldom to be wholly eradicated." Amphetamine use persisted at a low, endemic level among Japanese *yakuza* (organized criminals), truck drivers, and laborers. Then came affluence, expanding night life, and baby boomers entering their twenties. The newcomers to the amphetamine scene lacked, as one Tokyo paper put it, knowledge of "the dreadfulness of the awakening drug whirlwind." Use took off again in the 1970s and 1980s, peaking in 1984. The supply was now

wholly illicit in character. The *yakuza* derived 35 to 50 percent of their annual income from amphetamine trafficking, smuggling the drug from clandestine laboratories in Korea and, later, Taiwan and China.[23]

Amphetamines in Sweden initially came from licit pharmaceutical stocks. The drug was introduced in 1938 and restricted to prescription sale in 1939. But doctors were liberal: in 1942 they were prescribing amphetamines to 3 percent of the Swedish population. The vast majority, more than 200,000 patients, used amphetamines only occasionally, to cope with overtime or spells of depression. But 3,000 Swedes became near-daily or daily users, some building up tolerances as high as 100 tablets in 24 hours. A few of the early amphetamine addicts were also morphine users. They learned to dissolve and inject the tablets, a technique that spread in bohemian circles in the early 1950s. By then amphetamines were becoming popular with criminals, supposedly introduced by artists' models who had one foot in the atelier and the other in the street. Between 1949 and 1965, according to the psychiatrist Nils Bejerot, the number of persons addicted to amphetamine and related stimulants like phenmetrazine doubled every 30 months. From 1965 to 1967, during a brief experiment in medical maintenance—legal, state-financed amphetamines provided through doctors' prescriptions—the number doubled in just twelve months. The government reverted to a restrictive policy. By 1968 the prescription of stimulants required special permission, granted only 343 times that year for the entire country.

Bejerot, who looked broadly at the history of drug epidemics, likened them to infectious diseases. Their central feature, he decided, was proselytizing by young male enthusiasts not yet acquainted with the long-term destructive effects of drugs. Doctors might seed an epidemic or accelerate one in progress—Bejerot called the diversion-prone maintenance experiment of the mid-1960s the worst scandal in Swedish medical history. The real key, though, was youthful word of mouth. "If you go to a fine restaurant and you like it very much," explained one Stockholm addict, "then you tell your friends to go there. [This] is not recruiting. You tell them because you want them to enjoy. It is the same with us."[24]

Bejerot thought that only decisive government action, including the forced quarantine of addicts, could check the natural geometric progress of drug epidemics. He admired the campaigns of the Japanese government against stimulants and that of the Chinese Communists against opiates. History's lesson, he concluded, was that the mass abuse of drugs was not "a mysterious

and inexplicable natural catastrophe, but a form of social disintegration which can be understood and even controlled."

But not one that could be entirely eliminated. Prescription restrictions and other legal countermeasures drove the Swedish traffic underground, where it survived by servicing the demands of its most reliable customers, the socially marginal and deviant users. Some illicit stimulants originated locally, but most were smuggled in from Germany, Spain, and other European countries. These included, after the end of the Cold War, former Soviet satellites and republics. The Soviet Union, lamented *Komsomolskaya Pravda*, had turned into "Narcostan," the land of drugs.[25]

In Sweden, as elsewhere, the injection subculture turned ugly. Emaciated injectors roamed aimlessly in condemned, needle-strewn flats, pausing only to get "freshly lit" or to "flame out" with sleeping pills and sweet wine. Desperate users forged checks and sold their bodies; paranoid ones pulled knives on police and passersby. Street sales became flash points of violence. Christer Pettersson, imprisoned for life for murdering Prime Minister Olof Palme in 1986, was an alcoholic and amphetamine addict. He confessed to a run of 600 robberies between 1970 and 1977. Most of his victims were amphetamine dealers.[26]

The epidemiologist John Ball calls the discovery, commercial exploitation, and popularization of synthetics like amphetamine the outstanding change in the world drug scene since World War II. "These new drugs," he wrote in 1975, "have had general acceptance by the medical profession, and their ethical use has been widespread, especially in Europe and the United States. Concomitant with their legitimate medical use, however, there has rapidly developed an illicit traffic and widespread abuse." Whether their medical use was invariably "legitimate" is debatable, though Ball's central point is not: pharmaceutical innovation greatly increased the number of potential drugs of abuse and potential abusers. Multiple patterns of recreational use proliferated among the young in western nations and soon spread elsewhere, as evidenced by the growing popularity of amphetamines and other synthetics in Guatemala, Nigeria, the Philippines, and other developing nations. Worldwide, the number of clandestine laboratories found to be manufacturing amphetamine and related stimulants increased six-fold between 1980 and 1994. The explosive growth of the Internet, which made more detailed information on more drugs available to more people than ever before, further simplified the illicit manufacturing process.[27]

The Medical Dilemma

The shift from medical to popular consumption has occurred for all types of psychoactive drugs: plant, alkaloid, semisynthetic, and synthetic. Over the years, physicians' concern about this process produced an impressive body of admonitory literature of the "damn fool" variety. The damn fool in these cautionary tales is, of course, the patient. He smokes or drinks more than his constitution can bear, dumps too much sugar in his tea, drinks too much coffee, takes too many pills, or otherwise abuses substances that are valuable when taken in moderation and in the right circumstances. Damn fools disinclined to heed published warnings got the message in person. Sir William Osler, remembered today as the apostle of scientific medicine, spent much of his time in private practice simply advising patients to mind their smoking, drinking, exercise, and diet. He once took matters into his own hands, scattering a box of forbidden candies over a patient's bed.[28]

Physicians frequently warned one another about drug potency, contraindications, side effects, and abuse potential. They offered tips on safety: Don't let the patient know what he is taking. Don't leave the syringe at her bedside. Such criticism and advice often appeared in journal articles and textbooks, but also in less formal settings—consultations, hospital rounds, lecture rooms, personal correspondence. "Incidentally, I have seen and treated two Milltown [*sic*] addicts in the past few months," cautioned one Dallas physician in a 1961 letter. "Too many people have been told that it is harmless or innocuous and they eat them like peanuts."[29]

The sheer volume and repetitiveness of such complaints are clues to a deeper conflict at the heart of medical practice. Historically, few physicians have abandoned psychoactive drugs when they first heard reports of poisonings, diversion, or addiction. As the physician Stephen Tabor wittily observed, if he and his colleagues set aside every medicine whose abuse had occasioned mischief, not one would be left. Eventually, doctors do become more circumspect about abusable drugs, though such therapeutic conservatism often takes years to develop. Sometimes, as in the Japanese and Swedish amphetamine episodes, the state forces their hands.[30]

One reason for medical foot-dragging is financial conflict of interest. From Hippocrates onward doctors have understood that, for most patients, they can do little other than prognosticate and let nature take its course. Yet patients and their families expect them to do something to cure the illness or at

least to alleviate its symptoms. Doctors who succeed in meeting these expectations reap financial rewards; those who do not lose patronage. In these circumstances, drugs that provide pleasure, alleviate pain, dispel depression, restore energy, or bring sleep are attractive options. But how does one weigh their potential abuse against their humanitarian and financial advantages? Who should do the weighing, and on the basis of what information?

This last question is crucial. During the 1880s ethical drug manufacturers (those who advertised only to physicians and pharmacists, rather than to the public at large) began changing their marketing behavior. No longer content to react to shifts in medical fashion, they sought to shape physicians' demand for new products through aggressive sales tactics, such as the mass reprinting of favorable articles. One Parke, Davis production, *The Pharmacology of the Newer Materia Medica* (1892), included no fewer than 240 pages on coca and cocaine, then among the firm's leading products. Only 3 of the 240 pages dealt with cocaine's well-documented dangers, a ratio the historian Joseph Spillane dryly describes as "clear editorial bias against negative results." Reading medical trade ephemera, one quickly sees the general application of Spillane's observation: for more than a century physicians have been subjected to a well-aimed barrage of scientific-sounding advice that stresses drug benefits and minimizes risks. Any movement toward therapeutic conservatism has come against advertising's current. Recently the current has become stronger, as pharmaceutical companies have dropped the pretense of communicating only with medical professionals and have begun broadcasting claims for brand-name prescription drugs. Infomercials for Prozac air in the small hours and on weekends, when more depressed people are watching television. Physicians see patients who seek both relief and specific drugs—and who may go elsewhere if denied.

The conflict between loss of income and professional restraint is equally apparent in the history of pharmacy. A hundred years ago the big ethical question was whether pharmacists should sell drugs "indiscriminately" or to known addicts, lucrative customers who were nevertheless harming themselves and their families. One progressive New York pharmacist answered by suggesting that all reputable shops prominently display a sign: "A greedy criminal druggist will sell you morphine or cocaine; we are not of that kind." But things were not so simple in practice. Another prominent New York druggist wrote a journal article flatly condemning the sale of narcotics to addicts. One day his assistant observed the eminence dealing out a quantity of opium to a man who was plainly addicted. Confronted with the inconsistency, he protested that the man was the only one of his kind, that he had been supplying him for 25 years, "and that a refusal to sell it to him would only be the means of driving a good customer to another store."[31]

This was the control problem in microcosm. Profit-minded druggists or "dope doctors" or rogue manufacturers could frustrate attempts to confine drug usage to legitimate medical practice—the central goal of international drug policy as it evolved in the twentieth century. Though national drug laws differed over important details, such as addicts' eligibility for maintenance doses, the basic approach was everywhere the same: to control supply by regulating choke points in the producer-to-user drug flow through manufacturing quotas, licenses, prescription sales, triplicate record keeping, or other bureaucratic devices. The more dangerous the drug, the tighter were the regulations, a concept embodied in different "schedules," or lists of controlled substances, appended to statutes and international treaties. The object of this "bottleneck thinking" was to reduce both the aggregate supply of legally manufactured drugs and the likelihood of diversion, while maintaining a sufficient flow for ethical prescribing and research.[32]

The origins of this system are explored more fully in later chapters, as is the question of why some drugs like tobacco were exempted. One of the most obvious challenges to drug control, however, has been the ever-growing variety of potent synthetics. Before World War II the system regulated essentially three categories of drugs: those derived from opium, coca, and cannabis. Its creators did not envision the development of hundreds of new synthetics. They did not foresee that some of those synthetics, like etorphine, would be thousands of times more powerful than morphine. And they did not anticipate that millions of nonmedical users would surface after the new synthetics escaped clinical control.[33]

The parallel with nuclear weaponry struck several writers. Drug researchers, observed the psychologist Wayne Evans in 1971, faced moral dilemmas very similar to those encountered by physicists in the Manhattan Project. New psychoactive synthetics, like the release of nuclear energy, held an enormous potential for evil as well as for good. Help-the-patient, like defeat-the-fascists, was a powerful justification for their development. But what about those who might divert the technology to other ends? Nathan Kline, a brilliant and controversial American researcher—the Edward Teller of psychopharmacology—stated the issue concisely. The real question, he said, was not how to come up with new drugs to influence behavior and emotional states. That was comparatively easy. Much harder was "determining

Timothy Leary, apostle of LSD and veteran of 300 trips, outside his Millbrook, N.Y., headquarters in 1967. "I'm already an anachronism in the LSD movement," he modestly protested to an interviewer. "The Beatles have taken my place. That latest album—a complete celebration of LSD!"

who should make the decisions as to when they should be used, on whom and by whom."[34]

The refusal of some strategically placed individuals to submit to conventional authorities compounded the control problem. Timothy Leary abandoned a promising academic career ("LSD is more important than Harvard") and ultimately his freedom, spending several years in prison, to champion the psychedelic cause. Seeking political asylum in Switzerland, he encountered Albert Hofmann, the Sandoz researcher who had discovered the drug in 1943. One day in September 1971 the father of LSD and its apostle-in-chief met to discuss their differences over a meal of fish and white wine. Hofmann, who had entertained hopes that LSD might be used in the interests of psychiatric healing, was cordial but frank. Leary's efforts to seduce youth, for whom LSD was particularly dangerous, appalled him. Leary, he said, should have shunned publicity and stuck to quiet scientific investigation in an academic milieu.

Leary had three attributes indispensable to any true revolutionary: a contempt for caution, an indifference to casualties, and a knack for casuistry. He protested to Hofmann that the American teens whom he urged to turn on, tune in, and drop out had matured quite early. With so much information and life experience, they were comparable to adult Europeans! As for publicity, it was necessary to accomplish his historic mission. The overwhelmingly positive effects of getting out the good news about LSD would make any injuries and accidents, however regrettable, a small price to pay. Though Hofmann did not doubt Leary's idealism, he found it dangerously misguided. "Wrong and inappropriate use," he sighed in his memoirs, "has caused LSD to become my problem child."[35]

The use/abuse dichotomy, common in the world's medical literature, appears in its strongest form for narcotics and other highly addictive drugs, which Leary himself opposed. "The use of addicting preparations," declared Bejerot, "is medically defensible only in definite morbid conditions, and then, of course, under strict and competent medical control. All other use of these drugs is to be regarded as abuse." An anthropologist might question whether customary self-medication with opium to combat endemic diseases was "abuse" because it did not occur under the gaze of "strict" and "competent" authorities. Be that as it may, the distinction between medical use and recreational abuse has been present from the beginning of the psychoactive revolution; it has operated in Jewish, Christian, Islamic, Buddhist, and, to a

lesser degree, Hindu cultures suspicious of intoxication; and it has hardened into the central moral assumption of the international control regime.[36] Natural or synthetic, drugs that have slipped from organized medicine's grasp have provoked cries of concern and appeals for control—eventually from the sorcerer's apprentices themselves.

5

A Trap Baited with Pleasure

The idea that most drugs are dangerous substances best used in limited amounts under medical supervision has become the official attitude about their appropriate social role. But it is not the only attitude. Merchants, capitalists, and the political elites who tax them have long appreciated that drugs are seductive products and lucrative sources of revenue. The clash between opportunities for profit and concerns about health forms the central moral and political conflict running through the history of psychoactive commerce. Monetary motives and concerns are as historically significant as medical ones, and for some drugs doubtless more so. The first question to consider, however, is what is it about drugs that generates so much demand? And why do some people, as Simon Paulli observed more than three centuries ago, sacrifice everything they possess to acquire them?

The Evolutionary Paradox

Drugs are poisons. Psychoactive plant alkaloids evolved as a defense mechanism against herbivores. Insects and animals who eat them become dizzy and disoriented, or experience hallucinations. Yet some persist in eating intoxicating plants and fermented fruit, even though they disrupt their repertoire of survival skills. In evolutionary terms, *accidental* intoxication may be valuable: it warns an organism not to go near the plant again. *Seeking* intoxication, let alone profiting from it, is paradoxical. It seemingly defies the logic of natural selection.

One possible explanation is that the consumption of intoxicants satisfies a basic need. All people, argues Andrew Weil, possess an innate drive to alter their normal consciousness. Children at play will whirl themselves into a vertiginous stupor; holy men and women lose themselves in meditation. The desire to vacate ego-centered consciousness is deep-seated. However, some means of achieving this end are more dangerous than others. Drugs are powerful chemical shortcuts to altered states of mind. They do not alone determine the final state, which is a product of their interaction with the user's expectations ("set") and physical and social environment ("setting"). But they are key ingredients. Anyone who uses them to satisfy the drive is trading off toxic effects for potency and rapidity of action.[1]

Although Weil's postulated drive may be inborn, social circumstances have much to do with its strength. Bored, miserable creatures are more likely to seek altered consciousness than engaged, contented ones. Animals in captivity, for example, are much more likely to use intoxicants than those in the wild. And one could say that civilization itself represents a state of captivity. Humans evolved as hunter-gatherers in itinerant bands. After the Neolithic Revolution, most of them lived as peasants in crowded, oppressive, and disease-ridden societies. The misery and grinding poverty that were the lot of 90 percent of humanity in the early modern world go far toward explaining why tobacco and other novel drugs became objects of mass consumption. They were unexpected weapons against the human condition, newfound tools of escape from the mean prison of everyday existence. "There is no more profound way of understanding the course of history," Nathan Kline wrote, "than in terms of this effort to escape from one's own 'sweating self' and to experience even temporary states of euphoria or relief of discomfort regardless of the cost."[2]

Euphoria and relief are products of a molecular accident. Only a few toxic alkaloids have molecules that, if they succeed in entering the circulatory system and passing the blood-brain barrier, mimic or influence neurotransmitters in the brain's reward and pain-control centers. Nature is parsimonious with pleasure. Euphoria-inducing neurotransmitters are ordinarily meted out frugally and for some accomplishment that enhances survival or reproduction. Drugs fool the system, temporarily increasing the level of these pleasure-inducing neurotransmitters.

Though scientific knowledge has accumulated rapidly in the last three decades, researchers still do not know all of the ways the brain responds to dif-

ferent psychoactive drugs. Some, particularly alcohol, are "messy" in that they affect several neural systems. But they do appear to have at least one common denominator. They affect—directly or indirectly, strongly or weakly—the mesolimbic dopamine system, a primitive neural substrate that serves as a key pathway for pleasure and means of providing motivation for the choices we make. Drugs stimulate this system, and perhaps others not yet identified, signaling "good choice" by way of good feelings. Even a relatively nonintoxicating drug like coffee markedly elevates mood. A carefully controlled study of coffee drinking among nurses showed that those who drank two to three cups daily committed suicide only about a third as often as abstainers. It is a fascinating finding, entirely consistent with the notion of drugs as a coping tool.[3]

Before refilling your mug, however, bear in mind that the repeated use of caffeine and other drugs also alters the brain's natural chemistry in ways that are not healthful. Awash with external chemicals, the brain adjusts production of their internal equivalents or the number of receptors, becoming dependent on an outside supply. If that supply ceases, unpleasant consequences follow. Opiate withdrawal in particular triggers a cascade of symptoms: restlessness, sweating, extreme anxiety, depression, irritability, dysphoria, insomnia, fever, chills, retching and vomiting, explosive diarrhea, flu-like aches and pains. The cumulative misery has tempted many patients to suicide, as may be seen in the 1925 case history of Hermann Göring:

> Cause of illness: abuse of Morphine and Eukodal; severe withdrawal symptoms . . . The patient holds a prominent place in the "Hitler party" in Germany, took part in the Hitler putsch, during which he was injured and hospitalized; says he escaped from there to Austria, was given morphine by the doctors at the hospital, after which he became addicted to morphine. Admitted to Aspuddens [Nursing Home], the patient manifested violent withdrawal symptoms (in spite of the nurse allowing him more morphine), during which he became threatening and so violent that he could no longer be kept there. Threatened to take his own life, wanted to "die like a man," threatened to commit hara-kiri, and so on.

That Göring, winner of the *Pour le Mérite* (the "Blue Max"), should sink to such a state, or that he should continue to use opiates intermittently for the next twenty years, nodding off in *Luftwaffe* staff meetings, is a testament to

the extraordinary hold this class of drugs can exert on the human system. "When the druggist sells me my daily box of Eukodol [*sic*] ampules he smirks like I had picked up the bait to a trap," William S. Burroughs wrote Allen Ginsberg from Tangier in 1954. "Allen, I never had a habit like this before. Shooting every *two hours*. Maybe it is the Eukodol, which is semisynthetic. Trust the Germans to concoct some really evil shit."[4]

Physical and psychological withdrawal symptoms can follow the regular use of any of the principal psychoactive commodities, including the less potent ones like caffeinated beverages. In 1989 doctors at London's Hammersmith Hospital discovered that the headaches commonly experienced by postoperative patients had nothing to do with anesthesia. They were a consequence of abstaining from caffeinated beverages before and during surgery. Depression, fatigue, and lethargy are other common symptoms. Though withdrawal is not synonymous with addiction, researchers have nevertheless found unequivocal evidence of a "caffeine dependence syndrome." This refers to patients who go to extremes to obtain caffeinated drinks, use them in dangerous or inappropriate situations, and continue drinking them despite adverse health consequences and warnings by their physicians. Honoré de Balzac, whose stubborn devotion to coffee hastened his death from heart disease, is the historical prototype.[5]

The notion of *reversal of effects* helps to explain the paradox of why people persist in manifestly unhealthful behavior. They have, as Burroughs put it, walked into a trap baited with pleasure. Having begun using the drug to feel good, they dare not stop for fear of feeling bad. If addiction is the hijacking of the body's natural reinforcement mechanisms, withdrawal is the gun held to the head. Even addicts who detoxify completely—a process that can extend over many months for a drug like cocaine—are not the same afterwards. The brain remembers the chemical shortcuts to pleasure. Environmental cues such as a familiar tavern sign can trigger powerful cravings. Addiction is a chronic, relapsing brain disease.

Why Exposure Matters

The last sentence takes us into fiercely contested terrain. Before exploring the economic implications of addiction and the related phenomenon of tolerance, it is necessary to take a closer look at compulsive use. Is it fundamentally a problem of repeatedly exposing brain cells to drugs? Or is it a problem of individuals who happen to have the wrong genetic, psychological, social, cultural, and/or moral characteristics? This issue has enormous implications

for both understanding the history of drugs and implementing policies for their intelligent control.

At one extreme of the debate is a figure like Nils Bejerot who views drugs as germ-like pathogens that can artificially induce destructive drives in anyone: "No disturbed personality and no underlying social problems are required for an individual to develop a drug dependence." Exposure is the crucial variable. It explains why physicians in Germany, the United States, and other countries have historically had narcotic addiction rates up to 100 times that of the general population. "We almost never find a lawyer who plays around with the stuff," Harry Anslinger once remarked, "and nobody can tell me that lawyers are more moral or less inclined to get into trouble than doctors or nurses. You can't get away from it—if people lay their hands on the stuff, there are always a few who will try." Salvation lay in supply control.[6]

At the other extreme is a figure like Stanton Peele who views addiction as a people problem, not a drug problem. Addiction has nothing to do with a drug or its chemical properties. Indeed, people can become addicted to activities like gambling or drug treatment itself. In this view, addicts are essentially inadequate or misguided personalities who return again and again to drugs (or their behavioral equivalents) for a "reassuring absorption into a consuming sensation which takes away all consciousness of life's problems." Personal values determine whether people use, persist in using, become addicted to, and quit using drugs. Cultural values in turn shape personal ones. Cultures that tolerate drunkenness and invest alcohol with the power to control behavior suffer worse alcohol problems than those that frown on drunkenness and hold the individual accountable. Hence alcoholism is more widespread in Ireland than in Italy, despite high levels of per capita consumption in both countries. Supply matters less than the personal and cultural values that modulate demand and comportment.[7]

My own view of the matter (and that of most drug producers, distributors, and advertisers) is that both of these seemingly contradictory positions are true, though exposure is the critical precondition. Addiction following the use of any drug is the exception, not the rule. Only about a third of the young people who experiment with cigarettes, one of the most powerful addictive products known, become dependent users. Many individuals have inborn characteristics that confer immunity. The philosopher Karl Popper became so allergic to cigarette smoke that he turned into a virtual recluse. The real reason Bill Clinton didn't inhale marijuana is that he couldn't tolerate smoke in his lungs, despite repeated efforts by his friends to instruct him in

this essential Oxonian art. Anyone with a persistent, violent reaction to a drug is essentially addiction-proof. Those with strong superegos and religious scruples are similarly less prone to experiment. Their opposite numbers, thrill-seeking sociopaths, are far more likely to light up. Peele has a point: individual values matter. So do collective ones. A strong taboo against consuming (as opposed to exporting) opium helped the Turks avoid a major addiction problem. LSD never became popular in Chinese cultures that equated hallucination with mental illness. The indulgent Japanese attitude toward alcohol abuse, by contrast, diminished the protective effect of the flushing genes carried by half its population.[8]

Yet history furnishes equally dramatic lessons about the importance of exposure. Iranian opium production expanded rapidly in the second half of the nineteenth century. The silk industry went into decline, and opium seemed an attractive export crop for which there was rising world demand. But with time the exports fell, and large numbers of Iranians took to obliterating their miseries with home-grown opium. An estimated 2.8 million of them were addicts when Reza Shah Pahlavi's government attempted to eliminate production in the mid-1950s. The predictable result was fewer addicts, somewhere between a quarter and a half million in 1968, but more users of smuggled heroin. Heroin smuggled from neighboring countries also proved to be the bane of the Shah's puritanical successors. Though they launched a crusade against narcotics, hanging dealers by the score, they could not stanch the flow of heroin from Afghanistan and Pakistan. Nor could they ease the severe unemployment that tempted Iranians to engage in drug use and trafficking.[9]

That Cubans once smoked 30 percent of all cigars made in Cuba, that Asian communities which grow and sell opium have consistently higher addiction rates than those which do not, that African transshipment points like Ghana or Nigeria have developed serious heroin and cocaine problems, that Kentuckians suffer exceptionally high rates of lung cancer—all of this strongly suggests that proximity, and hence familiarity and availability, matters. But how much? In 1973 Philip Baridon published the results of a unique global study in which he compiled officially reported addiction rates for 33 countries. He then compared these rates to twelve independent social, economic, and geographic variables (for example, urbanization, per capita income, proximity to opium- and coca-producing areas) in a multiple-regression analysis (a statistical technique for estimating relative causal weights). Proximity alone explained 45 percent of the variance, far more than any other variable. "The most fundamental fact about drug abuse is frequently

overlooked in the welter of complicated psycho-social explanations," Baridon concluded. "If the drug is not available, there will be no abuse of it."[10]

This is why drug history is replete with giveaway promotions: bottles of Vin Mariani, cigarettes during rush week, smokeless tobacco at drag races, and surplus Brazilian coffee shipped gratis to Japan. The providers of the celebrated "free lunch" that accompanied the not-so-free beer in American workingmen's saloons a century ago played a clever variation on this theme. One Chicago salesman confided to a fellow worker that "he had had to swear off the free lunch when he realized he was beginning to go to saloons more for the beer than for the food." The idea behind all such schemes is to expose potential lifelong customers, particularly young ones whose consumption habits are still plastic. Young, single, undersocialized urban males who lack genetic or cultural protections and who are already using other drugs are on the A-list of susceptibility. They are most likely to experiment with and eventually become addicted to novel drugs, although, as Bejerot insisted, they are not the only types of people who become compulsive users. Given enough time and exposure, millions of others may join them. In 1915 American cigarette smokers were mostly confined to pool halls and street corners. In 1955 two-thirds of all American men between 25 and 64 smoked regularly, the vast majority of them cigarettes.[11]

Addiction, Tolerance, and Demand

Addiction—and it is addicted customers who consume a hugely disproportionate share of any drug—translates into relatively inflexible demand. Contrary to myth, addicts will not pay *any* price for drugs. Like other consumers, they are sensible of cost. If it rises high enough they will seek substitutes, make do with less, or quit altogether. Still, substances like opium or qat are qualitatively different from barley or oats. Dependent consumers will sacrifice more to continue using them than commodities that they do not crave. This is particularly true in the short run, above all while addicts are suffering through withdrawal.[12]

One summer evening, while strolling about on Hampstead Heath, the English essayists William Hone and Charles Lamb talked themselves into renouncing their habit of snuff taking. In a fit of resolution they hurled their snuff boxes from a hill into the brambles below and strode off in triumph. "I began to be very miserable," Hone later wrote. "I was wretched all night; and in the morning as I was walking on the same hill, I saw Charles Lamb below, searching among the bushes. He looked up laughing, and said, 'What, you

are come to look for your snuff box, too?' 'Oh, no,' said I, taking a pinch out of a paper in my waistcoat pocket, 'I went for a half-penny worth to the first shop that was open.'"[13]

Experiences like Hone's—smokers hunting for an open tobacconist in the small hours; alcoholics shivering in the cold, waiting for the liquor store to open; bleary-eyed commuters digging for change to purchase their morning coffee—were to become commonplaces of urban-industrial life. The "must have" feelings of millions of consumers helped insulate drugs against the business cycle. The economic historian Alfred Rive studied British tobacco consumption over a 40-year period from 1860 to 1900. He found that when unemployment rose from 2 to 10 percent, tobacco consumption fell only about 1 percent, a sure sign of relatively inelastic demand. Internationally, the industry more than held its own during the Great Depression. British-American Tobacco, among other firms, enjoyed record sales and increased profits. In the United States, retail tobacco sales fell less than a dollar per capita, from $26.23 to $25.29, between prosperous 1928 and disastrous 1932. C. W. Barron, the owner of *The Wall Street Journal*, confided that he had purchased three stocks after the 1929 crash: General Motors, Paramount Pictures, and American Tobacco. Americans, he reasoned, drove cars even when they couldn't afford them, went to the movies more often than they should, and would sacrifice just about anything for their cigarettes. "If you want to make money pick out some good vice," he said. "In hard times they will give up a lot of necessities, but the last thing they will give up is their vices."[14]

Drugs are also fashion-proof—a counterintuitive claim that needs some elaboration. Particular brands and modes of administration come and go: 101-millimeter cigarettes, cocaine free-base kits. But, once established, a drug will typically persist in some form across many generations. Drugs have legs. They have outlasted beaver hats and hoop skirts and other once-fashionable items long since relegated to museums. Historically, fashion has moved from the upper to the lower classes in a "chase and flight" pattern. Social inferiors, anxious for marks of status, copy novel modes of upper-class dress, decoration, and behavior. The elites, vigilant in defense of social distinctions, then drop the vulgarized styles and practices. They move on to something else, which is copied in turn. Thus fashion constantly changes, or, as Georg Simmel wrote in a famous essay, "as it spreads it gradually goes to its doom."[15]

Coffee, tea, and chocolate were fashionable upper-class drinks in Europe before they passed into more general use. Why weren't the silver pots retired

to the townhouse attics when commoners began imbibing? One answer is that these drinks (and perhaps the sugar so liberally spooned into them) possessed properties of physical reinforcement and habituation that the latest styles in dresses did not. British aristocrats might hold their gilt-rimmed cups in dainty fashion, signaling their status with refined manners, but they were not about to give up their beloved tea.

Dealers in tea had other advantages, among them lightness of weight and ease of adulteration. Although most people equate it with the black market, adulteration and its cousin in crime, brand counterfeiting, were common features of licit drug commerce everywhere before the twentieth century. Wine, spirits, tobacco, chocolate, coffee, tea, opium, and cannabis preparations were watered, sophisticated, doctored, or misbranded to stretch profits. Tea tampering was so notorious that London dealers placed Chinese attendants behind their counters to avert suspicion of sloe leaves.[16] Consumers' willingness to continue purchasing products of such doubtful content was, in a way, a measure of their dependency, another manifestation of inflexible demand. William Hone was unlikely to be too solicitous of the quality of the snuff he purchased after suffering a night of withdrawal.

Not all customers were as dependent as he. Yet, addicted or not, they soon developed a tolerance to their purchases. Tolerance occurs when repeated administrations of the same dose produce decreasing effects, or when users must take increasing doses to experience the original effect: the pub-goer who requires an extra pint to feel jolly. It is a built-in profit escalator, increasing demand without adding customers. Most people eventually reach a toxic plateau. The heaviest drinkers do not usually exceed 10 ounces of pure alcohol a day, or smokers two packs (40 cigarettes). But there are exceptions. FDR smoked as many as four packs a day, producer David O. Selznick five. John Wayne worked himself up to six. He wound up on the operating table with an egg-size tumor in his blackened left lung.[17]

By that time he had smoked well over a million cigarettes. The brief duration of psychoactive effects is another reason drugs are ideal products. Smoked drugs have a particularly quick and powerful effect, passing rapidly from lungs to heart to brain. Ingested drugs, such as alcohol or opium pills, enter the system gradually and are longer-acting. Nevertheless, apart from LSD, oral methadone, methamphetamine, and a few other drugs, they seldom have marked consciousness-altering effects beyond five or six hours.

Drugs are the opposite of durable goods. Although production surpluses can drive down prices, as has happened periodically with all the major drug

crops, there is little danger that demand will suddenly dry up. It is in the nature of the product that individuals are continuously liquidating their personal inventories. This is particularly true of those who become addicted to the shortest-acting drugs. Sub-Wayne-class cigarette addicts who smoke two packs a day inhale tobacco smoke approximately 150,000 times a year, consume upwards of 15,000 cigarettes, and, at current U.S. prices, spend well over 1,500 dollars in the process. "I'll tell you why I like the cigarette business," the legendary investor Warren Buffett once remarked. "It costs a penny to make. Sell it for a dollar. It's addictive. And there's fantastic brand loyalty."[18]

Contemporary drug merchants who plead ignorance of these facts are liars. But did their early modern forerunners understand the economic logic of drugs, or were they simply buying and selling without knowing the true nature of the demand they serviced? They certainly weren't blind to the compulsive use of tobacco, widely remarked by Europeans at home and abroad. "Tobacco, in this age growne so common," Francis Bacon wrote in his *Historia Vitae et Mortis* (1623), gave men "such a secret delight and content, that being once taken, it can hardly be forsaken." Observers also recognized that longtime opium users could easily consume amounts that would be fatal to the uninitiated. "This is a great merchandise," the Portuguese apothecary Tomé Pires wrote from Cochin in 1516. "Men accustomed to eat it become drowsy and confused, their eyes go red, and they go out of their senses. They use it because it provokes them to lewdness . . . It is good merchandise, consumed in great quantity, and very valuable." And seventeenth-century Europeans knew that long custom of drink might "turne delight into necessitie" 150 years before Benjamin Rush and Thomas Trotter crystallized the disease concept of alcoholism. Although physicians did not articulate addiction as a related cluster of nervous diseases (morphinism, cocainism, *caféisme*, and so on) with their own distinctive symptoms until the late nineteenth century, those who lived through the formative stages of the psychoactive revolution had at least a rudimentary understanding of the possibility, and economic consequences, of compulsive drug use and toleration.[19]

Intercourse and Enterprise

Early modern buyers did not purchase drugs solely to assuage their private woes or satisfy their "secret pleasures," pressing though those needs were. They also prized drugs as aids to social, political, and sexual intercourse—another reason drugs passed so quickly from the joyless realm of medicine.

Coffeehouses in the Near East, for example, provided an ideal excuse for men to get out of the house, to consort with other men in societies conspicuously lacking in institutions of male conviviality. It was in fact suspicion of coffeehouses as centers of male sociability and vice that led some sixteenth-century clerics to oppose the beverage, rather than the *marqaḥa* or "coffee euphoria" itself.[20]

European coffeehouses played a similar liberating role. They provided the rising middle classes with a forum for relaxation, caffeine-energized conversation, and the serious business of politics and art. Coffeehouses connected men and ideas across class barriers. The barriers of gender proved more formidable: women seldom frequented coffeehouses in the seventeenth and eighteenth centuries. They were, however, able to create their own conversational institutions, the *Kaffeekränzchen*, in which they educated one another on the latest news and fashions, much to the resentment of traditionalists.[21]

Cannabis and opium may not have fueled the Enlightenment, but their smoking assuredly fell under the heading of male group recreation, as did the smoking of tobacco pipes and cigars. Cigarettes served everywhere as the small change of sociability. "Smoke?" became a standard greeting among Chinese men, displaying their packs in outstretched hands. Like treating others in a tavern or coffeehouse, the friendly offer of cigarettes increased exposure, consumption, and ultimately addiction. John Uri Lloyd, an Eclectic physician, pharmacologist, and wide-ranging student of drug history, argued that companionship was more often the cause of "dissipation" than drugs themselves.[22]

The appeal of drugs, in short, lies in their social utility as well as brain reward. Culture shapes drug use, but drugs also shape culture, inspiring all sorts of social practices, from ceremonial toasts to coffee breaks. After World War I, American women found the cigarette to be much more than a drug-delivery vehicle. It was a useful prop in their role as newly public persons, a protean symbol of independence, availability, friendship, or—stubbed out vigorously in an ashtray—of anger and defiance. So integral did cigarettes become to twentieth-century social life that some people took to describing them as surrogate persons. "I find that it's like a companion," said one woman, who smoked when her husband was away. "It's like being in company with somebody," said a man, describing his feeling of smoking alone in the woods while hunting.[23]

By the mid-twentieth century, when nicotinic breath had become a romantic given, smoking served as a frequent accompaniment to lovemaking. So

The association between drinking and romance, illicit in this instance, is a frequent theme in art and literature. Alcohol, however, is most useful in the early stages of courtship, and then only in moderation. Knowing when to stop is tricky because of the lagged effects of drinking: the blood alcohol level keeps rising after the last drink, as alcohol already in the stomach continues to be absorbed. One more round before bed is generally not a good idea. From Theodor De Bry's *Emblemata Nobilitati* . . . (1592).

did alcohol, an ancient sexual facilitator whose amorous use remained widespread. "No is an extraordinarily complicated word when you're drunk," summed up the writer Caroline Knapp, who in her drinking days made it a point never to date an abstemious man. Alcohol, however, is more useful in the early stages of lovemaking than in its consummation. "It provokes the desire," as the porter says to Macduff, "but it takes away the performance."[24]

What many men have sought in aphrodisiac drugs is their ability to *delay* performance. Premature ejaculation is a commonly reported sexual complaint that has caused embarrassment and frustration in many cultures. In

1563 García d'Orta, a *cristão novo* physician in Goa (posthumously burned by the Inquisition as a secret Jew), published an account of drugs from India. It included descriptions of the hallucinatory and aphrodisiac uses of hashish, datura, and opium. Opium was "a merchandise in great demand everywhere," hoarded and eaten in small amounts to dispel daily cares. Yet opium eating often commenced for sexual purposes. (Recall Tomé Pires's allusion to "lewdness.") This was mysterious, Orta wrote, for all authorities testified that regular use led to impotence. Why were so many deceived? "This is not a very proper subject especially when we discuss it in Portuguese," he admitted, before launching into a circumlocutory description of simultaneous orgasm. "Taking Amfiam [opium] is here a help. It . . . assists to complete the venereal act more slowly."[25]

Morphine and cocaine have been put to similar dilatory uses. So have injections of amphetamine, known as sexual "pumps" in Swedish, a language full of colorful drug slang. Some antidepressants turned out to be surprise aphrodisiacs. "Incidentally," wrote a physician treating a patient with the antidepressant clomipramine, "his wife—a big film star type girl—wants him to stay on the drug as he can maintain an erection for considerably longer than ever before." The trap, as always, was baited with pleasure. Prolonged use of ejaculation-delaying drugs (and for that matter tobacco) commonly leads to impotence as well as addiction. In attempting to fine-tune one natural drive, men supplant it with another, artificial, and often more expensive one.[26]

Hallucinogenic drugs, which have less addiction potential, have frequently served as aphrodisiacs. "Compared with sex under LSD," Timothy Leary scolded the uninitiated, "the way you've been making love—no matter how ecstatic the pleasure you think you get from it—is like making love to a department store window-dummy . . . In a carefully prepared, loving LSD session, a woman can have several hundred orgasms." The effects of cannabis, widely used as an aphrodisiac in ancient and modern cultures, are far milder, though no less appealing. It at once disinhibits, sensitizes, and distorts time, making orgasms seem longer—effects likely enhanced by users' expectations. In 1980–1981 George Gay, a physician at the Haight-Ashbury Free Medical Clinics, and his associates carried out a unique study of 102 drug and sex aficionados. They interviewed the subjects about their preferences, which, in pre-AIDS San Francisco, encompassed just about everything. Surprisingly, this expert panel picked marijuana as the champion of increased sexual pleasure, ranking it ahead of MDA, nitrites (popular with gay men), cocaine, and LSD.[27]

Cannabis also enhances the enjoyment of food and music. "When you're straight, sex is great. When you're high, *everything* is great," remarked a 21-year-old student. While not all drugs are as broadly pleasure-enhancing as cannabis, a variety of cultural linkages have developed: wine with meals, coffee with dessert, beer with darts. Drug merchants are selling more than a transient high or relief from withdrawal. They are selling products that enhance an array of pleasures, from sex to scones.

While modern advertising consciously reinforces these connections, at least for licit drugs, it does not usually create them, nor is it indispensable to the process. Word of mouth—the hushed advice in the tavern, the graffiti in the *pissoir*—is more ancient and fundamental. Drugs and their affiliated pleasures are self-advertising, especially within deviant hedonic subcultures. Heroin, for example, first got its reputation for prolonging intercourse among young men who frequented the vice districts of northeastern U.S. cities—one reason its use spread rapidly within this group.[28]

Word of mouth helps in another way. Some people fall in love with drugs the first time they take them. "You can never top that first rush," Jim Carroll wrote of heroin in *The Basketball Diaries*, "it's like ten orgasms." The more usual reaction, however, is distaste or outright sickness. Sometimes the sickness is mixed with pleasure, sometimes not. Bitterness, acrid smoke, and vomiting are visceral forms of sales resistance and the greatest drawbacks of drugs as products. Like Elizabeth I, who was said to have given up smoking after one trial, many dabblers never try again. They submit to the evolutionary logic of toxic alkaloids.

Yet others persist. Peer advice and pressure are crucial to their efforts. Don't worry, everybody gets sick the first time. It's no disgrace. You'll get the good out of it next time. And if you can't get the hang of it, well, too bad. Early twentieth-century Russian workers ridiculed the rare comrade who refused to drink as a *krasnaia devitsa* (red maiden), *mokraia kuritsa* (wet hen), or *baba* (peasant woman)—all feminine forms. Real men could handle liquor. And tobacco. "They can't believe I don't smoke," Frank McCourt wrote of his youthful Irish companions. "They want to know if there's something wrong with me, the bad eyes or consumption maybe. How can you go with a girl if you don't smoke?" "You couldn't get anywhere, in the high-school society of the late forties, without smoking," agreed his American contemporary, John Updike. Though he found his first drags disagreeable, Updike gamely stuck with it, and went on smoking for more than 30 years.[29]

Problem Profits

New drugs and drug products often take market share from existing ones. Hit by competition from gin in the seventeenth century and caffeinated beverages in the eighteenth, Dutch brewers went into a long decline. In Latin America alcohol had to compete with cannabis, a product that developed a reputation as an inexpensive high. After cheap gin made its appearance, Nigerians began substituting it for the expensive kola nuts traditionally offered to visitors. The cigarette triumphed at the expense of other tobacco products. In 1900 American smokers averaged two cigars for every cigarette; in 1949, 65 cigarettes for every cigar. The success of aspirin—introduced commercially in 1899, it was one of the world's most widely used analgesics by 1914—gave doctors and patients a safe alternative to opiates. Iatrogenic (physician-caused) addiction diminished. Meanwhile, novocaine and other synthetic anesthetics virtually wiped out the medical market for the more dangerous cocaine.[30]

The drug market is not, however, a zero-sum game. For there are just as many examples of new drugs enhancing, or being added to, existing ones. Cola drinks and tea were employed to color moonshine and quench the thirst of qat chewers. Tranquilizers and barbiturates boosted the effects of alcohol, nicotine those of cannabis and qat. Cocaine spiced up heroin injections—"cocktails" in Switzerland, "speedballs" in the United States. Alcohol, medicine's ancient drug omnibus, simply added new passengers in the synthetic era. It was a key ingredient in narcotic-laced patent medicines and ethical preparations like Terp-Heroin, a respiratory antispasmodic. Drug companies discovered that adding barbiturates to diet pills and other amphetamine products had a synergistic effect; patients felt more euphoric and relaxed than if they had taken either drug by itself.

Tobacco and cannabis were highly complementary. They have been smoked together in virtually every culture in which they have taken root—for example, *kif* in Morocco, spliffs in Jamaica, blunts in the United States. Tobacco was a gateway to cannabis experimentation. The marijuana complex could not have arisen as quickly or spread as far as it did without the antecedent cigarette revolution. Heavy drinkers were also more likely to light up, notwithstanding the countercultural cliché of marijuana as a benign alternative to alcohol. If anything, smoking and drinking have increased the demand for marijuana and other drugs, rather than diminishing it.[31]

Drugs have often served to counter the effects of other drugs. Barbiturates and coca wines eased opiate withdrawal. Tranquilizers, opiates, and alcohol modulated the effects of cocaine. Coffee beans and kola nuts helped drunks recover from sprees. So did morphine and heroin: hangover was a common source of opiate addiction well into the twentieth century. Soft-drink manufacturers pushed a more benign alternative. "Got a hangover? Drink Coca-Cola," advised ads in West German papers after World War II. Sankyo, the Japanese pharmaceutical giant, pitched "Regain," a popular caffeine-and-vitamin tonic, to those who had downed too much *sake*.

These are all instances of what economists call externalities: unanticipated effects whose costs and benefits are not borne by those who occasioned them. Drugs are notorious for their harmful externalities, such as accidents and fetal poisonings; this is one reason they were subjected to progressively stricter regulation in the nineteenth and twentieth centuries. But the psychoactive revolution also spawned many profitable externalities. Bobbing in its wake were manufacturers and distributors of clay and briar pipes, jeweled snuff boxes, porcelain cups, art nouveau absinthe spoons, spill-proof bongs, flavored rolling papers, and a hundred other types of imaginative paraphernalia. (In the mid-1970s the Drug Enforcement Administration began estimating domestic marijuana consumption simply by extrapolating from cigarette paper sales.) Something about drugs fires human ingenuity. The sellers of lichee nuts and charcoal balls prospered; their merchandise was handy for holding dollops of opium and keeping pipes lit. In 1876 London alone boasted 30 Meerschaum pipe makers and importers. Across the continent in Constantinople, society women wore jewelry concealing miniature syringes. A century later their American counterparts sported gold pendants and earrings in the shape of Quaalude tablets.

Externalities often took the form of "problem profits." That is, the problems associated with drug abuse translated into opportunities for providers of symptomatic relief and treatment. In the mid-1930s the marketers of Bromo-Seltzer, an over-the-counter preparation of acetanilid, bromide, caffeine, and citric salts, discovered that most of their customers were lower-income men looking for relief from hangovers. They promptly dumbed down their ads and ran them in the Sunday comics, "the day most Bromo-Seltzer is used." Not to be outdone, rival Alka-Seltzer devised cartoon ads aimed at men who smoked as well as drank too much. Matchbooks bore ads for cough drops: "Soothes your throat, cleans your breath."[32]

The biggest windfalls went to organized medicine, which treated the con-

The seventeenth- and eighteenth-century boom in caffeinated beverages led to many new products, rendered in high style for wealthy consumers. In this pastel after *The Beautiful Chocolate Girl* (1743), the *Mona Lisa* of chocolate painting, a servant bears on her tray a Meissen cup with *Höroldt* adornment. The original artist, Jean-Etienne Liotard, used as his model the chambermaid who brought him his morning chocolate.

sequences of drug abuse and provided assistance for those struggling to quit. Nowhere were the profits from the latter enterprise greater than in the United States. What began as a motley collection of mail-order cures and private asylums ("dip shops" in upper-class slang) in the late nineteenth century had matured into a vast chemical dependency complex by the late twentieth. In 1992 expenditures on alcohol and other drug abuse treatment were running more than seven billion dollars annually, with another three billion spent for prevention, training, research, and insurance administration. Twenty years ago I met an ex-addict researcher employed by the New York State Division of Substance Abuse Services. I told him about my plans to create a street-level history of American narcotic use by taping the life histories of elderly methadone patients. That's fine, he replied, but it was too bad that I was missing out on the real story—the rise of the drug-treatment industry.[33]

The insight was larger than he knew. Problem profits are not unique to drugs; they inhere in all enterprises that exploit evolved drives. Fat and sugar were scarce on the African savanna where the human design was fine-tuned. Those who had a tendency to consume large amounts of fat when given the rare opportunity to do so were more likely to survive famines. We, their descendants, retain the taste, though it has become a health disadvantage and a readily exploitable weakness in a world of fast food. In fact, the confluence and sensory enhancement of new foodstuffs after the Columbian exchange bears an uncanny resemblance to what happened with drugs. No New World, no chocolate bars, no pizza sauce, no popcorn, no french fries—currently the fate of one in every three American potatoes. By 1997 American food processors were shipping 386,000 metric tons of french fries overseas. McDonald's, which was feeding 7 percent of the U.S. population each day, had opened 10,000 stores in 105 countries, 2,000 in Japan alone. The company was serving Big Macs from Rovaniemi, Finland, just south of the Arctic Circle, to Invercargill, New Zealand, 13,200 miles away. Kentucky Fried Chicken was doing business in the shadow of the Sphinx. Ten years before, in 1987, the world's largest KFC outlet opened just across from Mao's final resting place in Tian'anmen Square, dispensing gravy and mashed "potato mud" to the willing masses.[34]

These popular sacrileges, like drug commerce, have a transcultural biological foundation. We all like sweet and fatty foods. Some obese individuals, like some susceptible drug users, add to the "natural" attractions of such foods by using them to cope with boredom, frustration, anger, depression, insecurity, and despair. "Capitalism and the medical establishment profit not

just from our biological tendency to enjoy high-calorie foods and psychoactive drugs," comments the historian Susan Speaker, "but from the ubiquity and variety of human misery, physical, psychological, and spiritual." The human price of the profit varies. For those of us who have inherited "thrifty" fat-storage genes, or who live in exercise-poor automotive societies, overeating often results in catastrophic illnesses like diabetes. Yet, judging from weight-gain figures, we cannot stop ourselves. Our evolved tastes and desires, inflamed by corporate advertisements, defeat our intellect and willpower. "How ironic," remark Randolph Nesse and George Williams, authorities on Darwinian medicine, "that humanity worked for centuries to create environments that are almost literally flowing with milk and honey, only to see our success responsible for much modern disease and untimely death."[35]

Ironic, but also profitable for the providers of insulin, arterial stents, liposuction, diet pills, treadmills, and lite foods. The peculiar, vomitorious genius of modern capitalism is its ability to betray our senses with one class of products or services and then sell us another to cope with the damage so that we can go back to consuming more of what caused the problem in the first place. Dieting, as the critic Richard Klein wryly noted, is the most highly perfected form of consumption.[36]

Drug makers certainly cashed in on fat. Fashion models quickly discovered the slimming possibilities of amphetamines. The English model Jean Dawnay described her New York counterparts of the early 1950s as living on Benzedrine, Dexedrine, and black coffee: "Their incredible slimness staggered me." Millions of women who longed to emulate the wraith-like images of high fashion resorted to cigarettes, which suppress the desire for sweet foods, as their secret weapon in the war against weight. "If you look the word 'model' up in the dictionary, it means example," observed Andie MacDowell, who took diet pills and cocaine to stay thin while modeling. "Now kids'll try and be that size, they'll drink Diet Cokes and smoke cigarettes all damn day." Or worse. "There are certain, practical things that doing lots of heroin or cocaine takes care of," explained the actor Robert Downey, Jr., a man in a position to know. "Like weight problems, or attention deficit disorder."[37]

Diet books at supermarket checkouts, Viagra to restore erections lost to the cumulative effects of cigarettes first smoked to enhance manliness—it all seems impossibly contradictory, but only from a public-health perspective. From the standpoint of profit maximization and full employment it is quite logical, even inevitable. Problem profits are a defining feature of mature capitalism, which can no longer sustain growth simply by churning out innocu-

With regard to health and pleasure, a consumer society is like a dog frantically chasing its own tail. One product, pie à la mode, leads to demand for another—and profits for enterprising drug companies. Ads like this one for Methedrine (methamphetamine hydrochloride) ran in American medical journals in the 1950s. Their designers aimed to create a "response habit" among doctors so that they would, as a first resort, prescribe trade-name drugs for certain patient profiles.

ous commodities and durable goods. Soy beans and clothes driers generate only so much economic activity. Drugs, which radiate externalities, produce far more. They are a kind of perpetual motion machine, providing steady work for everyone from peasants to lawyers to drug historians.

"We live in a society," Thomas Merton complained in 1948, "whose whole policy is to excite every nerve in the human body and keep it at the highest pitch of artificial tension, to strain every human desire to the limit and create

as many new desires and synthetic passions as possible, in order to cater to them with the products of our factories and printing presses and movie studios and all the rest."[38] That is exactly right. Drug dealers are to dopamine what pornographers are to testosterone or food engineers are to taste buds or plastic surgeons are to reproductive fitness. They are all profit-seekers who have managed, with the assistance of technology, to plug into internal reward or regulatory systems that evolved under circumstances radically different from those of the present. That such exploitation can be physically dangerous and morally subversive is apparent enough. What to do about it is a recurring political dilemma, one that grows more urgent with the wiring of the world.