9

Economics of Illegal Drug Markets: What Happens If We Downsize the Drug War?

Mary M. Cleveland

An economic analysis of the illegal drug markets suggests that if the U.S. drug war were downsized (by cutting back interdiction efforts, targeting primarily large or violent dealers, and reducing severity of punishments), the following would happen:

1. *Prices would fall, marijuana prices more than hard-drug prices.* There would be some increase in casual use, especially of marijuana, and a shift to marijuana away from cocaine, heroin, and possibly alcohol.
2. *The black market sales volume would increase, but the number of dealers would decrease.* At present, probably a majority of regular illegal-drug users also deal part-time to help pay for their own use; the lower the price, the fewer who would deal.
3. *The black market would become less dangerous.* Small, teenage dealers would be replaced by larger, less-violent, adult dealers.
4. *The number of problem drug users would probably not increase, but their per capita consumption might increase dramatically.* Problem users who survive by petty theft would probably not steal less if drug prices declined but simply consume more.

Defenders of drug prohibition make a straightforward supply-and-demand argument: Legalization, or any lessening of aggressive enforcement, will lower the high cost of drugs, in terms of price, risk of arrest, severe punishment, and social opprobrium. Consequently, drug abuse will skyrocket. According to Dr. Herbert Kleber, medical director of the Columbia Center on Addiction and Substance Abuse, and former deputy to William Bennett, drug czar under President Reagan,

> There are over 50 million nicotine addicts, 18 million alcoholics or problem drinkers, and fewer than 2 million cocaine addicts in the United States. Cocaine is a much more addictive drug than alcohol. If cocaine were legally available, as alcohol and nicotine are now, the number of cocaine abusers would probably rise to a point somewhere between the number of users of the other two agents, perhaps 20 to 25 million . . . [and] the number of compulsive users might be nine times higher . . . than the current number. (1994, 16)

This is a tough challenge to answer. None of us can accurately predict the future; fear of the unknown often makes us rather bear those ills we have than fly to others that we know not of.

Table 9.1. Prohibitionist Assumptions about Drugs versus Alternative Assumptions

Prohibitionist Assumptions	*Alternative Assumptions*
Illicit drugs are all extremely dangerous and addictive. Marijuana is a "gateway" to hard drugs.	Licit and illicit drugs vary greatly in danger and addictiveness. Most marijuana users do not go on to hard drugs.
All use of illicit drugs or underage use of licit drugs like alcohol is "abuse" —assumed to be individually and socially destructive. This assumption is built into official language, such as the U.S. Department of Health and Human Services' "National Household Survey on Drug Abuse."	Most use is not abuse. Drug users, like alcohol drinkers, fall naturally into three categories: a small proportion of problem users, a larger proportion of regular users, and a majority consisting of casual users. Problem users are equivalent to (and often also are) alcoholics. Regular users, like regular drinkers, control the quantity and timing of use so as not to disrupt work or a normal family life.
The addictive properties of illicit drugs cause "abuse." Perfectly normal young people who try drugs are liable to become hooked. By implication, the number of abusers is proportional to the availability and addictiveness of a drug.	Drug and alcohol abuse are symptoms of underlying emotional problems, although substance abuse may make those problems harder to treat. By implication, the number of abusers is proportional to the number of troubled people.
Illicit drugs cause crime, driving users to violent behavior and to theft to support addiction.	While a majority of violent or property-stealing criminals use and/or deal illicit drugs, most illicit drug users do not commit any non-drug-related crimes.
Cost and access are major determinants of illicit drug use.	Personal tastes and social norms are usually more important than cost or access.

However, predictions derived by economic logic depend on the underlying assumptions about reality; change the assumptions, and the predictions change too. Defenders of prohibition make one set of assumptions; critics, myself included, make other assumptions. Table 9.1 briefly paraphrases prohibitionist assumptions, contrasted with alternative assumptions.

Section I of this chapter surveys some evidence supporting the alternative set of assumptions. Section II applies some basic economic principles to these assumptions. Section III examines some policy implications.

THE PRESENT DRUG SITUATION IN THE UNITED STATES

Properties of Licit and Illicit Drugs

If both licit and illicit drugs vary greatly in danger, addictiveness, and other properties, one might expect stricter drug-control policies for more dangerous substances. Appendix 9A reviews the properties of major legal and illegal drugs and the types and harms of drug use. Table 9A.1 provides two rough rankings of three licit and three illicit drugs (see Appendix 9A). Both rankings put alcohol near the top with heroin, and cocaine and marijuana near the bottom with caffeine. If these rankings are valid, they cast doubt on the prohibitionist assumption that illicit drugs are so much more dangerous than licit drugs as to require "zero tolerance."

Patterns of Licit and Illicit Drug Use in the United States

Table 9.2 is compiled from the 2002 National Survey on Drug Use and Health, published annually by the U.S. Public Health Service. It summarizes a survey of use for alcohol, cigarettes, and five categories of illicit drugs. Respondents were polled as to whether they had ever used, used in last year, and used in the last month.

These figures surely understate illicit drug use, both because respondents may be unwilling to admit illegal activity, even in total confidence, and because some of the heaviest illicit drug users are in jail or homeless. Nonetheless, a few points stand out:

- Use of alcohol and cigarettes is many times the use of illicit drugs.
- Use of the "soft" drug marijuana is many times the use of "hard" drugs cocaine and heroin. Some 95 million adults—about 40 percent of the adult population—admit to having tried marijuana; some 34 million admit to having tried cocaine; some 3.7 million admit to having tried

Table 9.2. National Survey on Drug Use and Health: Population Estimates 2002 (in thousands)

Use Substance	*Ever*	*Percent Ever**	*Last Year*	*Percent in Last Year*	*Last Month*	*Percent in Last Month*
Alcohol	195,452	83.1	155,476	66.1	119,820	51
Tobacco	171,838	73.1	84,731	36.07	71,499	30.4
Total illicit	108,255	46	35,132	14.9	19,522	8.3
Marijuana	94,946	40.4	25,755	11	14,584	6.2
Cocaine	33,910	14.4	5,902	2.5	2,020	0.9
Inhalants	22,870	9.7	2,084	0.9	635	0.3
Stimulants	21,072	9	3,181	1.4	1,218	0.5
Tranquilizers	19,267	8.2	4,849	2.1	1,804	0.8
Sedatives	9,960	4.2	981	0.4	436	0.2
Heroin	3,668	1.6	404	0.2	166	0.1

* Percent of population twelve years and older

Source: Substance Abuse and Mental Health Services Administration, Office of Applied Studies, U.S. Department of Health and Human Services, Public Health Service, Rockville, MD 20857.

heroin. Clearly, only a small proportion of marijuana users go on to try cocaine or heroin, let alone become addicted.

- Licit substances used illicitly constitute a major portion of "abuse." Right after cocaine come inhalants, that is, gasoline, glue, laughing gas, amyl nitrate, and other legal substances. (Inhalants are used primarily by children, who lack access to more serious intoxicants.) Next in magnitude are stimulants, mostly amphetamines. Then come prescription tranquilizers and sedatives used without a prescription.
- Only a small portion of those who have tried illicit drugs still use them; a much larger portion of those who have ever used alcohol and cigarettes still use them.

Three Kinds of Drug Users

Users of drugs—licit or illicit—fall naturally into three rough categories: casual users, regular users, and abusers. Since the term "abuser" is so often applied to all users of illicit drugs, I generally use the less ambiguous term "problem user" for the third category.

- *Casual users or experimenters:* These include light or social drinkers and people who may try drugs when offered by a friend. These also include teenage "beginners." Casual users are largest in number but account for only a small fraction of drug volume.
- *Regular users:* Regular users of alcohol drink daily after work; some may binge on weekends. Regular illegal drug users follow a similar pat-

tern. Regulars lead normal lives, maintaining jobs, families, friends, and health. They consider drug use as a form of relaxation or recreation. Regular users of illegal—or legal—drugs enjoy them and usually share them with friends. Most regular users of illegal drugs also deal them to pay for their own use.

- *Problem users:* Unlike regular users, problem users characteristically feel worthless and hopeless. Their lives may become an obsessive pursuit of hard drugs, alcohol, or both at the expense of jobs, family, friends, and health. They may try repeatedly to stop; every failure makes them feel yet more worthless and hopeless. Unless supported by family, extreme problem users lead a degrading, hand-to-mouth existence. They may survive by panhandling, scavenging, prostitution, odd jobs, petty theft, public assistance, or mooching from relatives and friends. Problem users of illegal drugs rarely deal; no distributor would trust them with drugs on consignment. Many are so-called polydrug abusers, consuming whatever intoxicants are available at the moment, often in combination. Though smallest in number, problem users account for the greatest volume of alcohol or drug consumption. They are also the most likely to suffer from disease due to contaminated needles or to die from overdoses.

Table 9.2 shows clearly that the harder the drug, the fewer the users and the smaller the percentage more frequent users make up of the total users. Assuming that the "Last Month" category includes all regular and problem users, then regular and problem users make up no more of the "Ever" category than 61 percent for alcohol, 15 percent for marijuana, 6 percent for cocaine, and 4.5 percent for heroin. There are no reliable estimates of what proportion of total consumption each group accounts for. However, in accordance with usual patterns of distribution, it's reasonable to assume that the top 20 percent of consumers account for some 80 percent of the consumption of each drug.

As suggested by the relatively small proportion of problem users, as well as by abundant sociological and psychological research (Peele 2004), drugs do not cause problem drug use. Rather, problem drug use is a symptom of the way people feel about themselves and their situation: that they are no good, unlovable, or incompetent ("worthless") and that they have no future and no control over their lives ("hopeless"). To ill-educated, poor people coming from abusive homes, or no homes, such feelings may seem to have powerful objective justification. Of course, the consequences of initial nonproblem drug use, such as rejection by family, expulsion from school, or imprisonment for drug possession, may exacerbate feelings of worthlessness and hopelessness, leading to full-blown problem drug use.

In 1995, the *New York Times* interviewed Dr. Jack Block, the director of a major ongoing longitudinal study of several hundred children in Oakland, California. Block reported,

> [W]hen the teenagers reached 18 . . . not all adolescent drug use boded a grim future. In this study, those teenagers who had experimented with drugs like marijuana during their teenage years—compared both to those who used them heavily and those who abstained—were the best adjusted. The teenagers who used drugs most frequently were the most alienated, had the poorest impulse control and the most emotional distress, while those who had never tried any drugs were the most anxious, emotionally constricted and socially inept. . . . Dr. Block's conclusion was that [problem] drug use is a symptom of maladjustment, not a cause, and that it can best be understood in the context of the larger course of life. (Goleman 1995a; Shedler and Block 1990)

Problem drug use is but one form of harmful behavior associated with feelings of hopelessness and worthlessness. Other forms include eating disorders like anorexia, compulsive gambling, and obsession with sex. These disorders respond to good counseling, often combined with antidepressant medication, to help people feel they can control their lives (Beck 1993; Peele 2004).

Drug Dealers

Legal dealers. Dealers of legal drugs, of course, are all respectable adults: liquor- and tobacco-industry members, shopkeepers, and bar and restaurant owners.

Illegal dealers. The greatest difference between legal and illegal dealers is volume. Retail alcohol and tobacco markets are supplied by relatively few, high-volume dealers. In the United States, the retail illegal drug markets are supplied by a guerrilla army of small dealers, most of them temporary, part-time, unsophisticated, and generally unprofessional in their business conduct. There are three major categories of small dealers: user-dealers, juvenile dealers, and "mules."

User-dealers. Most illegal dealers, from kingpins on down, are regular users. Retail user-dealers generally do not sell much beyond the amount necessary to pay for their own use. They sell drugs wherever they go or wherever they can: at work, at school, at parties. As a last resort, the poorest of them sell on the streets, exposed to arrest and violence from other dealers. A 1990 RAND study of drug economics in Washington, D.C., for 1985 to 1988, when the crack cocaine market was just beginning, estimated that one-sixth to one-third of young black men (ages eighteen to twenty-four) in Washington, D.C.,

or about twenty-four thousand men, sold drugs at the street level part-time or full-time. Two-thirds of these men also held low-paying jobs, averaging $7 an hour. They sold drugs primarily on evenings or weekends, when the market was active. The study found that few of these men made much money at this activity; they simply covered the cost of their own use and often spent some of their earned money in addition (Reuter, MacCoun, and Murphy 1990).

Juvenile dealers. In the United States at least, there is another important category of low-level dealer besides the user-dealers: nonusing juveniles, teenagers and preteenagers, mostly boys, recruited to the drug trade by older siblings, relatives, friends, or neighborhood gangs. Some of these youngsters are coerced into the business; others are attracted by what seems like easy money. In addition, as juveniles, they face relatively low penalties if arrested. Most of these juvenile dealers will eventually become users.

Mules. Mules are ordinary persons not regularly in the drug trade, who are occasionally recruited to transport large quantities of drugs precisely because they do not appear suspicious. Despite their peripheral involvement, mules face the heaviest sentences when caught since penalties depend on the weight of drugs and mules have little or no information to use in bargaining with prosecutors.

Drugs and Crime

The War on Drugs is often justified as a crime-control measure. In fact, the war may generate more crime than it controls. The relationship between drugs and crime is well reviewed by David Rasmussen and Bruce Benson in their book *The Economic Anatomy of a Drug War* (1994) and their report *Illicit Drugs and Crime* (1996). In brief:

Illicit drug use and crime. A large majority of those who commit violent and property crimes are also illicit drug users and small dealers. However, the converse does not hold. Most illicit drug users do not commit violent or property crimes. This is also clear from table 9.2: some 108 million people, 46 percent of the American adult population, admit to using illicit drugs at some time; 19.5 million admit using in the last month.

Drugs and violent crime. Alcohol is the only drug consistently associated with violent behavior performed "under the influence." Most "drug-related" violence arises in turf battles between rival dealers (Goldstein 1989).

Drugs and property crime. Both proponents and many opponents of drug prohibition agree that drug addicts must steal to get drug money. Proponents and opponents of prohibition draw opposite policy conclusions. Proponents advocate stricter and more punitive enforcement of drug laws on the grounds

that making drugs unavailable and locking away addicts will lower property crime. Opponents argue that ending prohibition will bring down hard-drug prices so that addicts would not need to steal.

If drugs do not "cause" property crime, then both policy prescriptions will fail.

First, as noted, most drug users do not steal. They buy drugs with their own money. Consequently, a general war on drug users diverts scarce criminal justice resources from the pursuit and imprisonment of property and violent offenders. Rasmussen and Benson present statistics from Florida showing how the drug war in Florida from 1984 to 1989 resulted in the early release of nondrug offenders from overcrowded prisons and an increase in property and violent crime as police shifted their efforts toward the apprehension of drug offenders (Rasmussen and Benson 1994, 2003). An economic analysis of crime and drug statistics in New York City reached essentially the same conclusion, namely, that "increased law enforcement is a more effective method of crime prevention in comparison to efforts targeted at drug use." (Corman and Mocan 2000).

Second, sociological evidence indicates that most individuals first engage in criminal activities, including theft, as juveniles, *a year or two before they become drug users* (Reuter, MacCoun, and Murphy 1990). Often, of course, these are the same juveniles who are recruited as lookouts and runners for the illegal drug trade. Through the drug trade, they come into regular contact with older, confirmed property criminals. Thus, to the extent that the War on Drugs creates enticing criminal opportunities for juveniles, it may draw them into lives of nondrug crime.

Finally, down-and-out hard drug addicts steal as part of the degraded lifestyle of problem users. Too disturbed to be employable, they steal to survive and get high to make a miserable life briefly more bearable. A more punitive approach will not deter them. It will more likely confirm their degraded status. Nor will a fall in drug prices deter them. On the contrary, lower drug prices may make theft more rewarding by allowing them to purchase more drugs for their money!

Drugs, Personal Preferences, and Social Norms

Defenders of current drug prohibition argue that the fall in drug prices following legalization or even after some slackening of enforcement would lead to a large increase in drug "abuse." This claim rests on the standard prohibitionist assumption that all use is abuse and the further assumption that price is a major consideration for most users or would-be users. Prohibition defenders also argue that the drug war, besides punishing users and dealers,

sends a message condemning drug use. By "sends a message," they presumably mean that it affects individual views, or "personal preferences," and shared group views, or "social norms."

I believe that the evidence shows that, as with most consumption, personal preferences and social norms influence most people more than the price of drugs. (As I show later, price *is* important to down-and-out problem users.) As for the "message" claim, the antidrug message may well have had a powerful impact on social norms—the norms of people who have little knowledge of or contact with drugs and therefore support the drug war. The message does not appear to have reached actual drug users. As many advertisers discover to their dismay, preferences cannot be manipulated at will, and norms have a way of taking off into unexpected fads and fashions. Moreover, norms are often specific to small groups in special circumstances, hard to influence from the outside.

Here are some examples of the power of personal preferences and social norms in determining drug use.

Alcohol has always been far more popular than other intoxicants in Western culture. This was true in the early twentieth century before Prohibition, when opiates and cocaine were legal and widely available. In several European countries and in Australia, actual, or de facto, decriminalization of possession has not produced any significant increase in drug use; alcohol remains king. Jeffrey Miron and Jeffrey Zwiebel (1991) estimate that while total alcohol consumption fell to 30 percent of prior levels at the beginning of Prohibition, it soon rose again to 60 or 70 percent, then remained stable through the end of Prohibition and for ten years afterward, rising again in the 1940s. (The failure of consumption levels to rise immediately may be due to the Depression.) In any case, serious alcohol drinkers quickly found their way around Prohibition.

Thousands of GIs became addicted to high-grade opium while serving in Vietnam. Despite fears of an explosion in opiate addiction, most quickly and easily kicked the habit on returning to the United States (Robins 1973). Why? It may have been acceptable to get stoned while sweltering in a bug-infested jungle camp, waiting for an invisible enemy, but the social norms of the communities to which the GIs returned did not tolerate opiate use, and the GIs themselves had better things to do.

According to a July 1995 *New York Times* series (Verhovek 1995), illegal drugs are easily and cheaply available in U.S. prisons, smuggled in by prisoners' relatives and corrupt guards. At one prison, drugs are so cheap that prisoners actually export them for sale outside. Imprisonment does not stop people who want drugs badly enough, and imprisonment without treatment does not deter problem drug users. If anything, it makes them feel more hopeless and more prone to drug use.

The Center on Addiction and Substance Abuse (CASA) at Columbia University issued the *National Survey of American Attitudes on Substance Abuse* (CASA 1995, 88). Among other findings, 30 percent of sixth through twelfth graders surveyed stated that it was easy to obtain cocaine or heroin; yet, 82 percent reported that none of their circle of friends used hard drugs, and another 13 percent reported that "less than half" used them, leaving only 5 percent reporting "more than half." The CASA survey does not distinguish between regular use and occasional experimentation, so even the 5 percent greatly overstates hard-drug use.

Problem substance users take intoxicants to escape feelings of worthlessness and hopelessness. Changes in the price of those intoxicants may affect the quantity and combination consumed but not the underlying feelings. Effective drug treatment relies on changing problem users' attitudes: convincing them that they have worth and dignity as individuals, that their situation is not hopeless, and that they can in fact control drug use that threatens their health, their jobs, their families, or other valuable parts of their lives (Beck 1993).

To summarize: Most people choose not to use illicit drugs even when they have cheap and easy access to them. Enforcement can have some effect on light users; regular and problem users will get their drugs even in prison. Drug treatment and changes in social norms have far more influence on drug use than enforcement because they affect individuals' attitudes.

ECONOMIC IMPLICATIONS OF DRUG POLICY CHANGES

In addition to their assumptions about drugs, prohibition supporters make two crucial assumptions about policy; critics make alternative assumptions (see table 9.3).

The following are seven possible options for change in drug policy:

1. We can give up foreign drug eradication and interdiction efforts, primarily in Latin America, which studies by the RAND Institute and others indicate have a negligible impact on domestic prices and the availability of illicit drugs.
2. We can scale back and restructure domestic enforcement to concentrate efforts on major traffickers and violent dealers, ignoring small user-dealers and ordinary users as long as they remain discreet and nonviolent. This is generally the practice in Europe, Canada, Australia, and some U.S. localities, notably San Francisco, California.

Table 9.3. Prohibitionist Assumptions about Policy versus Alternative Assumptions

Prohibitionist Assumptions	*Alternative Assumptions*
A drug-free America is a realistic political objective to be pursued by a strategy of zero tolerance for drugs and drug users.	Aiming for a drug-free America is not just unrealistic but cuts off sophisticated consideration of alternative objectives and trade-offs among those objectives. A zero-tolerance policy in practice fosters ineffective deployment of resources, notably going first for the easy targets: small street-level dealers or marijuana smokers.
We have only two choices of policy: prohibition or legalization.	In reality, we can choose among a huge range of policy options along many dimensions. Policy options include not only actual laws but enforcement strategies and—a crucial reality often ignored by noneconomists—the allocation of limited resources among those strategies.

3. We can reduce penalties for drug possession or dealing, in particular the long, mandatory-minimum prison sentences that a 1997 RAND study has shown to be both costly and ineffective in deterring drug dealers (Caulkins et al. 1997). We can reduce or eliminate penalties for possession and shift from prison sentences to fines. We can eliminate property forfeitures.
4. We can provide treatment to problem users who seek it, including easy access to methadone for opiate addicts. We can provide clean needles and other health care to those who do not seek treatment.
5. We can provide better educational opportunities and counseling, including "big brother" and "big sister" programs, to disadvantaged children who are most at risk of becoming problem users or dealers.
6. We can replace drug "education" designed to frighten children and their parents with drug education that conveys accurate information about the characteristics and risks of different legal and illegal drugs.
7. We can follow some of the European decriminalization, legalization, and medicalization experiments or design our own. Many Western countries, including Great Britain, Germany, and Italy, treat possession of small quantities of drugs as a minor offense or no offense at all. For over twenty-five years, the Dutch have allowed adults to purchase small quantities of cannabis in "coffee shops."

The first three changes amount to a retreat from aggressive, indiscriminate prohibition enforcement. In practice, these changes would mean a return toward earlier U.S. policies, before President Nixon declared war on drugs in the late 1960s. I call such a change "downsizing the drug war" to indicate not only a smaller but a more cost-effective endeavor.

The second three changes—improved treatment, prevention, and education—simply expand on programs already sporadically implemented in some localities. A 1994 RAND study, financed by the U.S. Army (!), estimated that additional spending on treatment would reduce cocaine consumption by seven times as much as additional spending on domestic enforcement (Rydell and Everingham 1994b).

Only the last change—experimenting with extensive decriminalization, legalization, or medicalization—goes beyond policies with which we have direct experience in the United States. I refer to these as "experimental policies," to indicate that they are not well tested and encompass a wide range of possibilities.

In the discussion that follows, I focus on the consequences of downsizing the drug war for two reasons. First, it is hard to imagine the implementation of experimental policies in the United States without prior changes in criminal justice, health care, and education. Second, when prohibition defenders predict the consequences of legalization, they seem actually to describe—inaccurately, I believe—the consequences of a large, poorly controlled black market. Prohibition critics hope that the experimental policies they advocate will shrink and control the black market.

All else being equal, downsizing the drug war would accelerate the long-term trend of falling black market prices and increasing purity and availability of illicit drugs. However, we cannot simply assume, as prohibition defenders do, that such downsizing would automatically produce an explosion in drug abuse. As suggested above, for most people under most circumstances, the price and availability of illicit drugs are at best a minor consideration. The consequences of downsizing are complex and not obvious—and can be affected strongly by simultaneous changes in other policies.

In the rest of this section, I apply basic economic principles to suggest the consequences of downsizing the drug war. In the final section, I briefly address experimental policies.

Impact of Downsizing on Dangerousness of Drugs

Downsizing the drug war will shift consumption to less potent and dangerous drugs. The combination of two useful economic principles explains why.

1. *High transportation and transaction costs screen out low-value goods.* Only the best California artichokes get shipped to New York. It does not pay to ship average- or low-quality ones. During Prohibition (1920–1933), beer and wine were not worth smuggling. Bootleggers concentrated on hard liquor, including 120 proof liquor, which had a high ratio of value to transportation cost. Only the finest wines made it to the tables of the rich. After Prohibition, beer and wine soon dominated the alcohol market again, and high-proof hard liquor disappeared. Today, the cost and risk of drug smuggling shift the mix of available drugs toward highly concentrated heroin and cocaine, or designer drugs, and away from less-potent drugs, especially from bulky, odorous marijuana. Put another way, while drug prohibition raises the cost of all illegal drugs, it disproportionately raises the cost of milder drugs, especially marijuana. *Downsizing the drug war will lower the cost of marijuana more than that of hard drugs.*
2. *People constantly make trade-offs.* All else being equal, people who want to get high will do so in ways that offer the fewest dangers and side effects. Most drinkers choose beer and wine over hard liquor. Intravenous drug users choose clean needles if they can get them (Goleman 1995b). Opiate users sniff heroin or even eat opium if it's available. Cocaine users sniff powder rather than smoke crack. Most drug takers choose marijuana over heroin or cocaine. In fact, given the opportunity, many choose marijuana over alcohol. Combining the preference for safer highs with a fall in drug prices, especially the price of marijuana relative to hard drugs and alcohol, we get a clear economic prediction: *downsizing the drug war will shift consumption to less-potent, safer drugs, increase the use of marijuana in proportion to hard drugs and alcohol, and shift hard-drug users toward safer practices, for example, sniffing instead of injecting heroin.*

Impact of Downsizing on Casual, Regular, and Problem Users

Downsizing the drug war will affect casual, regular, and problem drug users quite differently. The number of casual and regular users may increase. Regular users may consume about the same amount but deal less. The number of problem users may remain stationary, but they may substantially increase per capita consumption.

Two other useful economic principles underlie these predictions.

1. *The market price of a good often poorly measures its cost, which includes time, risk, inconvenience, side effects, and any number of other*

considerations. Out-of-season asparagus is cheap for a greengrocer, who knows the produce market and buys wholesale. For me, asparagus not only costs ten dollars a pound, but I must also spend time searching for a store that carries it. Similarly, user-dealers pay far less than black market street prices of illegal drugs, while poorly connected users pay far more.

2. *The effect of cost on the buyer of a good depends heavily on how important the good is in his overall budget; the larger the budget share, the greater the effect.* I do not watch the cost of copy paper; an office manager does. The effect of cost on drug buyers depends on the proportion of their income they spend on drugs.

From these two principles we can derived the following conclusions:

Casual users. Convenience and risk matter more than price to casual users and potential experimenters. Casual users include teenagers sampling illegal drugs for the first time. Virtually all regular and problem users start use as teenagers. To a casual drug user, a high street price (say $100 per gram of cocaine) is barely relevant because drugs are so small a part of his budget. Even a fourteen-year-old can easily come up with $10 or $20 dollars from time to time. Casual users are strongly affected by convenience and risk. For an unconnected, would-be, adult drug buyer, the cost is the street price plus the time, inconvenience, and risk of cruising around to locate a dealer, as well as the risk of obtaining drugs of uncertain concentration that may be cut with some toxic chemical. In short, for the casual buyer, the cost is far higher than the street price. Whether a would-be experimenter buys at all depends on the availability of trusted dealers. For children too young or timid to go to town, drugs become accessible and attractive only if their circle of friends and acquaintances includes user-dealers. Downsizing the drug war may make illegal drugs more easily and safely available to casual users. (Marijuana is now more easily available to children than alcohol.) Since marijuana appears to be coming back into fashion—in the teeth of aggressive prohibition—downsizing might facilitate a substantial increase in casual marijuana use.

Regular user-dealers. Regular user-dealers obtain drugs at very low effective cost, making them insensitive to market price. Regular users include both adults and teenagers. These individuals may consume large dollar quantities of illegal drugs. Some may be addicted to heroin or cocaine but not to the extent that they cannot function. Most hold jobs or attend school. Unless they earn very high incomes or inherit money, regular users also sell drugs to cover the cost of their own use. That is, they buy drugs from a familiar wholesaler, sometimes on consignment, sell part retail and use the rest. (Even very rich users often give drugs to friends, which is still dealing in the eyes of the law.) For user-dealers with little earning power and low aversion to risk—true of

most teenagers and many low-wage workers—a few hours a week selling drugs to pay for their own use may seem a negligible cost. Regular users prove particularly hard to discourage from taking drugs. Like regular or moderately heavy drinkers, they have enough control over use that they do not consider themselves to have a problem. Since they get their drugs virtually for free, a decline in drug prices will not increase their personal use of drugs. However, a decline in prices may lead some of them to spend less time dealing or to stop dealing altogether. Unfortunately, the ones least likely to be discouraged from dealing by a decline in drug prices are those with the lowest earning power: poorly educated teenagers. These are precisely the dealers it is most important to eliminate as they are the ones who recruit new users and dealers from their peers.

Problem users. Down-and-out problem users are strongly affected by the street price of drugs. They are too unreliable or emotionally disturbed to deal drugs to support their habit. No drug wholesaler would trust them with a consignment. Drugs constitute a major part of problem users' meager budgets. Although relatively few in number, they provide much of the demand that fuels the drug market. They pay the high street price and spend their lives in search of drugs and cash to purchase drugs. Their drug consumption is severely limited by the amount of cash they can beg, steal, scrounge, or earn by turning tricks. Fluctuations in the street price and availability of drugs make their lives an endless roller-coaster. Unlike experimenters and regular users, problem users will consume substantially more drugs if prices decline from current market prices. Only when the price has fallen so low that problem users can afford quantities near their physiological limit will further declines in price not lead to more consumption. The characterization of down-and-out problem users as extremely sensitive to price runs directly counter to the assumption of many prohibition supporters and critics alike: that addicts must get their daily fix and, if need be, will steal whatever it takes. From this assumption flows the—I think vain—hope that if drug prices fall, addicts will steal less.

Evidence from the RAND study of cocaine and user behavior. The 1994 RAND study of cocaine markets supports this predicted behavior of users. The study divides users into two groups: "light" and "heavy." The heavy users correspond roughly to combined regular and problem users. According to RAND's estimates, based on the 1990 National Household Survey of Drug Abuse, the 22 percent of users classified as "heavy" consumed 70 percent of cocaine (Rydell and Everingham 1994b).

Figure 9.1, taken from the RAND study, shows heavy and light users for 1972 through 1992, a period of steady drug war escalation. The number of light users peaks in about 1982, declines steadily until about 1990, then

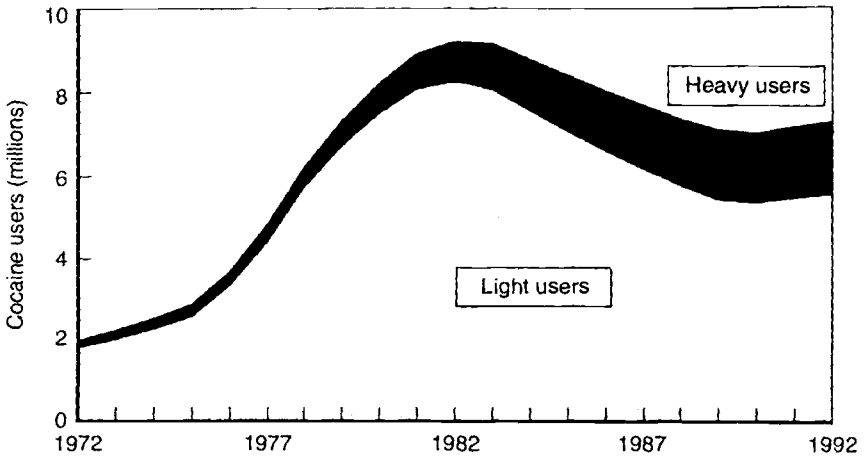

Figure 9.1. Number of Cocaine Users, by Intensity of Use

starts to rise again. The number of heavy users increases only slightly over the 1982–1992 period. Figure 9.2 for the same period shows consumption by light users first rising, then falling, while use by heavy users increases dramatically, especially after 1980. Figure 9.3 shows expenditure on cocaine for the period. While expenditure by light users rises and falls, expenditure by heavy users remains remarkably constant. Figure 9.4 shows a dramatic decline in real cocaine prices from 1977 to 1992, from about $750 per pure gram to a bit over $100 per pure gram (Rydell and Everingham 1994a, 2–4).

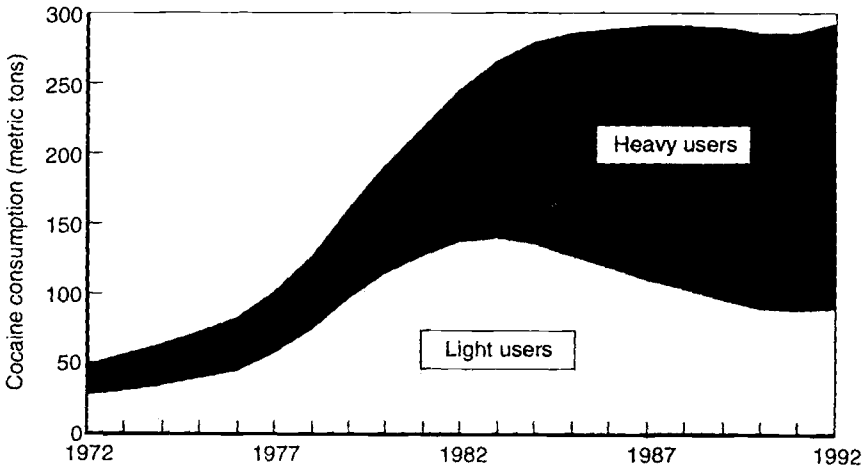

Figure 9.2. Cocaine Consumption, by Type of User

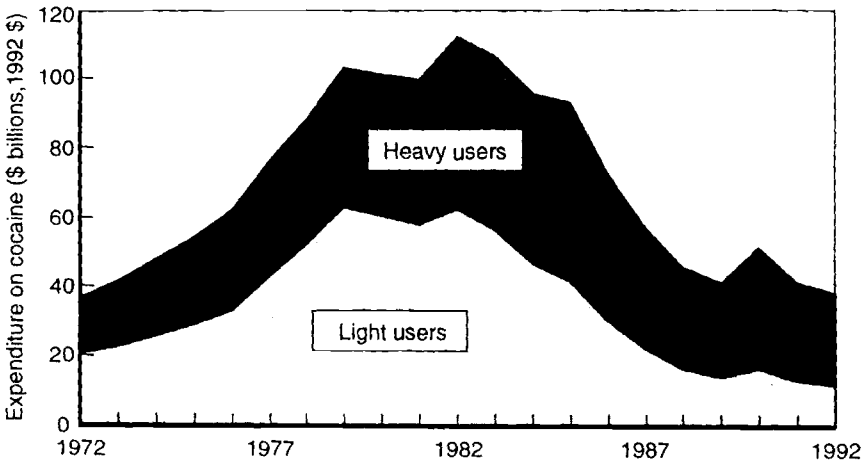

Figure 9.3. Expenditure on Cocaine, by Users

These data support the following interpretation: Light and heavy users of cocaine increase in number during the 1970s as cocaine becomes fashionable and prices fall. In the 1980s, light users drop out (or never start) as the drug war makes casual use increasingly risky and inconvenient. Heavy users maintain an almost constant dollar volume of consumption over the period. During the second half of the period, the number of heavy users increases only slightly, so *per capita expenditure by heavy users remains nearly constant in the face of sharply declining prices.* This suggests, in turn, that a large proportion of heavy users spend everything they can get

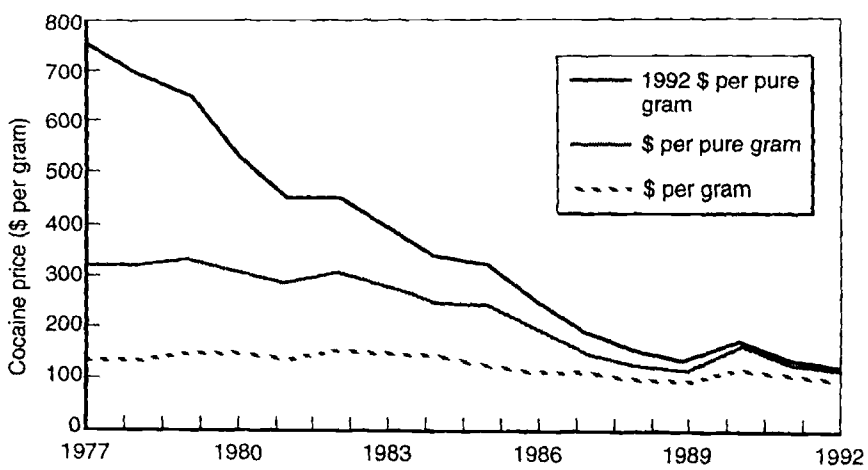

Figure 9.4. Price of Cocaine: 1977–1992

on cocaine. Price times volume remains constant; the lower the price, the more they spend. Clearly, down-and-out problem users dominate the heavy-use category. They cannot scrounge enough money to consume anywhere close to the physiological limit (3g to 5g a day). Consequently, as prices fall, their per capita consumption increases in proportion. If prices fell from $100 per gram to $50 per gram, their consumption might double.

In this very limited sense, prohibition defenders are correct: a fall in the price of cocaine or heroin will indeed produce a dramatic increase in per capita consumption by down-and-out problem users. But booming illicit drug markets may eventually bring prices so low that junkies, like winos, can easily afford their physiological limit.

Impact of Downsizing on Drug Markets

Downsizing the drug war will shift the illicit drug market into the hands of fewer, older, less violent sellers. Illicit drug markets in the United States are notorious for the presence of large numbers of ill-educated, violent juveniles. This is not the case in European or Australian illicit drug markets, where drug dealing is not prosecuted with anything like U.S. zeal (Zimring and Hawkins 1992). The principle of comparative advantage suggests why.

People find the occupation not that they are absolutely the best at but that they are relatively the best at, even though they may be absolutely terrible at this occupation. The textbook example of comparative advantage is the lawyer and her secretary: the lawyer types much faster than her secretary, but it still pays for her to go to court, leaving the secretary at the word processor. An example closer to hand: most common criminals are astoundingly incompetent at crime and make at best a miserable living before they are (usually quickly) caught. The explanation: if these hapless individuals were more competent at anything else, they would not be criminals.

In any well-functioning, competitive market, buyers and sellers develop long-term personal relationships. Sellers try to retain their customers by providing quality goods and services. Customers seek out and stick with reliable sellers. Long-term relationships are even more important in "normal" illegal markets, like numbers or escort services or supplying drugs to the well-to-do—where trust and discretion are at a premium. Illegal sellers work out turf arrangements quietly and without violence, lest they frighten the customers or attract the police.

Low-end drug markets in the United States are another story. Police routinely conduct drug sweeps of poor urban neighborhoods, arresting and searching all the occupants of a building or all the pedestrians on a block. Per-

sons caught with drugs are offered a deal by prosecutors: they will be charged with lesser offenses, carrying lighter mandatory sentences, if they cooperate by turning in or entrapping other drug sellers, buyers, or even potential buyers. (A tape recording of someone agreeing to buy drugs is enough to convict, even without any evidence that the person actually could or would buy the drugs [Adler 2004].)

Such "search-and-destroy" drug enforcement drives out any marginally decent or competent sellers. It pushes drug markets from one neighborhood to the next, giving an edge to sellers who can quickly establish new turf before the next sweep. It creates an atmosphere of suspicion and fear in which sellers and customers do not know each other and do not want to (Zimmer 1990). Who sells drugs in such a dangerous market? Low-income user-dealers who need to pay for their habits and young, ill-educated, violent teenagers, kids who will trade their very limited futures, even their lives, for a few hundred dollars.

Many prohibition critics and supporters alike share the assumption that retail drug dealing is immensely profitable. On the contrary, low-end illicit drug markets are the employment opportunity of last resort. As the RAND study of dealers in Washington, D.C., showed, most small dealers at best merely pay for their own use (Reuter, MacCoun, and Murphy 1990). Young teens may briefly make a few hundred dollars a day. Before long, however, they will be arrested or shot or become regular user-dealers, consuming their profits. Eventually, many will become problem users. Joey Tranchina, who operates the AIDS Prevention and Action Network in San Mateo County, California, conducted an unscientific survey of drug-treatment centers in four San Francisco Bay Area counties. He asked, "What percentage of your adolescent self-described drug addicts were dealers before they were regular users of drugs?" The answer was 70 to 80 percent (Tranchina 1997)!

Nicholas Pastore (1996), former police chief of New Haven, Connecticut, pursued a strategy of targeting violent drug gangs while ignoring discreet and nonviolent small dealers. Comparative advantage suggests that even with no change in drug laws, such an approach allows drug markets to be reclaimed by more businesslike adults, who care about serving long-term customers. A return of the markets to nonviolent adults in turn reduces opportunities for teenage dealers and, therefore, teenagers' access to drugs.

POLICY IMPLICATIONS: PROTECTING CHILDREN AND HELPING PROBLEM USERS

If a "drug-free" nation is an impossible dream, then we must settle for lesser objectives, set priorities, and accept trade-offs. I propose that we select two

primary objectives: protecting children and helping problem users. Protecting children means both restricting their access to drugs as much as feasible and reducing the likelihood and seriousness of problems. (This is equivalent to discouraging children from early sex but still providing condoms.) Helping problem users means not only getting them into treatment but addressing their underlying problems, including depression, disease, and lack of education. To the extent that helping problem users shrinks the black market, it also furthers the goal of protecting children.

Downsizing the drug war contributes to the goal of protecting children. It shifts the market toward marijuana and away from hard drugs, it makes the markets less violent, and it reduces incentives for children to deal. On the other hand, downsizing the drug war permits a larger (although safer) black market with easier access for casual users, including nondealing children. Downsizing should not much affect the number of problem users, whose drug use arises not from drug availability but from emotional problems; however, *downsizing will enable problem users to consume more*, possibly much more.

Can experimental policies of legalization or medicalization retain the benefits of downsizing while controlling the disadvantages? According to the analysis above, here's how the illicit drug market works: Regular user-dealers sell to casual users on the one hand, and to problem users on the other. In addition, some retail dealers are nonusers, particularly young teenage recruits to the inner-city drug business. Casual users, who include teen experimenters, are not sensitive to price but are very sensitive to risk and convenience. Down-and-out problem users are very sensitive to price. Regular users are not very sensitive to either price or risk. Problem users account for the bulk of drug consumption. Can we design policies to take advantage of these characteristics?

Since children are casual users, to keep them out of the black market, we must make the market inconvenient; that is, we must make it hard for children to find sellers. The first step is to reduce or eliminate the primary sellers to children: other children. The second step is to shrink the black market itself; the smaller the market, the harder it becomes for casual users or would-be users to connect with dealers.

Marijuana

The above logic underlies the Dutch legalization experiment. For twenty-five years, the Dutch have allowed the sale of small quantities of cannabis (marijuana or hashish) to adults in "coffee shops," while keeping hard drugs illegal. By making the least dangerous and most popular illegal drug legal in this fashion, the Dutch have sought simultaneously to shrink the

black market and shift consumption further away from hard drugs and toward cannabis. By making cannabis available only to adults under carefully supervised circumstances, they also hope to minimize black market access by children. After twenty-five years of coffee-shop legalization, estimated Dutch marijuana consumption per capita remains well below that of the United States—again suggesting that culture is more important than price and availability. The Dutch are satisfied that the policy works; the only serious complaints have come from prohibitionist neighbors, notably France.

The Dutch approach to marijuana—a limited number of outlets selling small amounts to adults only—resembles a restrictive version of U.S. alcohol control as practiced in most localities. What might it accomplish in the United States? I think we could expect a virtual elimination of black market marijuana dealers, including juvenile dealers. However, there would probably not be a great reduction in underage access.

Absent a black market, underage marijuana control depends on the questionable cooperation of otherwise law-abiding adults—as does alcohol control. There is no significant black market in alcohol. There are no teenage alcohol dealers in the schools. Yet, drinking is rampant among underage high school and college students, especially binge drinking on the weekends. Why? Because adults tolerate or facilitate it. Liquor sellers fail to check IDs. Kids newly turned twenty-one supply younger siblings and friends. Parents do not control access to their liquor cabinet. Parents permit their children to party without proper supervision. Colleges allow fraternities to serve liquor to underage students. Why do adults wink at underage drinking? Because they also drank as teenagers! (At my high school graduation party, not only were many of my classmates drunk, but so were three sets of parent chaperones!) Nonetheless, I maintain that parents who seriously want to keep their children from drinking can usually do so until the children leave home. Elimination of black market marijuana might give parents similar control over access.

Dutch-style legalization of marijuana of course "sends a message" of greater tolerance for marijuana. Norms already seem to be shifting toward greater tolerance. Prohibition defenders have a realistic concern that a change in laws may accelerate the shift.

Heroin

Heroin lies at the opposite end of the illicit drug spectrum from marijuana. Users are few compared to users of cocaine or marijuana but include a large number of problem users, many seriously ill. If we can just get the problem users out of the market, the market will shrink drastically.

We can, of course, get many problem users out of the market by expanding drug-free treatment—a proposal with which no one disagrees. We can get even more out by expanding methadone maintenance programs for heroin addicts unable to go drug free and lifting the restrictions that make these programs so ineffective (Rettig and Yarmolinsky 1995). In 2002, the Food and Drug Administration approved a promising new opiate substitute, buprenorphine, which lasts longer than methadone. As programs in the United States and Europe have demonstrated, many addicts can take opiate substitutes or even heroin indefinitely and still lead reasonably normal lives.

Cocaine

Unlike heroin, cocaine is psychologically but not physiologically addictive. A stimulant, it gives users a powerful feeling of well-being and alertness but does not cause withdrawal symptoms. Problem users tend to binge, staying awake for two or three days and then sleeping it off. This pattern seems to preclude maintenance programs like those for opiates.

Suppose cocaine were cheaply dispensed in small amounts to adult users by prescription? The prescription requirement might pose a substantial barrier of inconvenience to would-be casual users, although obviously adults with a prescription might share with friends, including underage friends. More important, a prescription approach for adults could eliminate teenage dealers, many of whom are at risk of becoming problem users.

What about Dr. Kleber's frightening predictions, quoted above, of an explosion in cocaine "abuse" consequent with legalization? His predictions are, of course, a guess, possible but exceedingly unlikely. Legalization by prescription might increase the overall number of users (whom Dr. Kleber conflates with abusers), but it might simultaneously decrease the number of problem users by eliminating teenage dealers.

The only way to find out for sure what would happen with legalization in any form is to experiment cautiously.

CONCLUSION

Downsizing the U.S. drug war to more modest and cost-effective levels of enforcement offers substantial benefits. There must always be some policing of illegal drug markets, just as with bootleg liquor markets. But the drug war makes the black markets very dangerous, therefore attractive to troubled young people with limited opportunities and a high risk of becoming problem users of hard drugs. The drug war does not cause the family and social prob-

lems that put young people at risk, but it does divert resources and attention from education and treatment programs that could help them.

However, some consequences of downsizing may surprise even opponents of the drug war. There will, of course, be a drop in prices and increased use of illicit drugs, combined with a shift to less dangerous drugs, notably marijuana. The number of small, part-time dealers will decline. Drug dealing will shift away from teenagers to more stable, less violent adults. The number of hard-core problem drug users will not increase and may even decline if treatment replaces imprisonment. Contrary to the popular impression, however, such hard-core users are extremely sensitive to cost because drugs form so large a part of their meager budgets. Thus, as prices fall, these problem users will proportionately increase their consumption.

REFERENCES

Adler, Charles, personal communication, 2004.

Beck, Aaron T., Fred D. Wright, Cory F. Newman, and Bruce S. Liese. 1993. *Cognitive therapy of substance abuse*. New York: Guilford Press.

CASA. 1995. *CASA national survey of American attitudes on substance abuse*. New York: Center on Addiction and Substance Abuse, Columbia University, July.

Caulkins, Jonathan P., C. Peter Rydell, William L. Schwabe, and James Chiesa. 1997. *Mandatory minimum sentences: Throwing away the key or the taxpayers' money?* Santa Monica, Calif.: Drug Policy Research Center, RAND.

Corman, Hope, and H. Naci Mocan. 2000. A time-series analysis of crime, deterrence and drug abuse in New York City. *American Economic Review* 90(3) (June):584–604.

Cotton, Paul. 1994. Smoking cigarettes may do developing fetus more harm than ingesting cocaine, experts say. *JAMA* 271(8) (February 23): 576–77.

Goldstein, Paul J. 1989. Drugs and violent crime. In *Pathways to criminal violence*. Edited by Neil A. Weiner and Marvin E. Wolfgang. Newbury Park, Calif.: Sage.

Goleman, Daniel. 1995a. 75 years later, study still tracking geniuses. *New York Times*, March 7, C1.

——. 1995b. Researcher kills a myth of syringe sharing. *New York Times,* September 20, B10.

Kleber, Herbert. 1994. Our current approach to drug abuse—progress, problems, proposals. *New England Journal of Medicine* 330(5) (February 3).

Miron, Jeffrey A., and Jeffrey Zwiebel. 1991. Alcohol consumption during Prohibition. *American Economic Review* 81(2):242–47.

Pastore, Nicholas. 1996. Personal communication.

Peele, Stanton. 2004. *7 tools to beat addiction*. New York: Three Rivers Press (Random House).

Rasmussen, David, and Bruce Benson. 1994. *The economic anatomy of a drug war.* Lanham, Md.: Rowman & Littlefield.

———. 1996. *Illicit Drugs and Crime*. Oakland Calif.: The Independent Institute.

———. 2003. Rationalizing drug policy under federalism. *Florida State University Law Review* 30:679.

Rettig, Richard, and Adam Yarmolinsky, eds. 1995. *Federal regulation of methadone treatment*. Washington, D.C.: Institute of Medicine, National Academy Press.

Reuter, Peter, Robert MacCoun, and Patrick Murphy. 1990. *Money from crime: A study of the economics of drug dealing in Washington D.C.* Washington, D.C.: RAND.

Robins, Lee N. 1973. *The Viet Nam veteran returns*. Washington, D.C.: U.S. Government Printing Office.

Rydell, C. Peter, and Susan S. Everingham. 1994a. *Controlling cocaine: Supply versus demand programs*. Washington, D.C.: Drug Policy Research Center, RAND. Data from U.S. Department of Health and Human Services, National Household Survey on Drug Abuse, Rockville, Md., 1994.

———. 1994b. *Modeling the demand for cocaine*. Washington, D.C.: Drug Policy Research Center, RAND. Data from U.S. Department of Health and Human Services, National Household Survey on Drug Abuse, Rockville, Md., 1994.

Shedler, J., and J. Block. 1990. Adolescent drug use in psychological health, a longitudinal inquiry. *American Psychologist* 46: 612–30.

Tranchina, Joey. 1997. Personal communication.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. 2003. *National survey on drug use and health: Population estimates 2002*, available at www.oas.samhsa.gov/nhsda.htm (accessed March 8, 2005).

Verhovek, Sam Howe. 1995. Warehouse of addiction. *New York Times,* July 2–4, 1.

Zimmer, Lynn. 1990. Proactive policing against street-level drug trafficking in New York City. *Am. J. Police* 9:43–74.

Zimring, Franklin E., and Gordon Hawkins. 1992. *The search for rational drug control*. Cambridge, Mass.: Cambridge University Press.

Appendix 9A: Use, "Abuse," Adverse Health Effects, and Addiction

Mary M. Cleveland

Not only is "drug abuse" often defined as all illegal-substance use, but it is also commonly equated with both adverse health effects and addiction.

In reality, patterns of use vary enormously, from drug to drug and from person to person. I distinguish "occasional," "regular," and "problem" use in chapter 9 and avoid the term "abuse." Adverse health effects and addiction are separate issues.

Adverse health effects. The adverse health effects of drugs fall into three categories: (1) adverse effects of the drugs themselves, b) adverse effects of the mode of ingestion, and c) adverse effects of the degraded lifestyle of problem users.

1. *Adverse effects of the drugs themselves:* Prolonged heavy doses of alcohol cause liver damage and eventually brain damage, as well as mental retardation of children exposed in utero. Cocaine and amphetamines can cause heart problems and even heart failure in a small minority of susceptible individuals; otherwise, these stimulants have little scientifically documented ill effect on health. South American natives chew coca leaves all their lives to no ill effect. Cocaine is the local anesthetic of choice for nasal surgery—in doses higher than those taken by recreational users. Nicotine causes loss of peripheral circulation and even gangrene in susceptible individuals; women who smoke heavily during pregnancy also tend to have low-birth-weight babies. Caffeine causes a variety of ill-defined problems for susceptible individuals. Opiates cause constipation but no scientifically documented lasting injury to health; however, overdoses can be fatal. The active ingredient of marijuana, cannabinol, may cause some short-term memory loss after recent

heavy use, but no scientifically documented lasting injury to health, and there are no recorded deaths from overdose.

2. *Adverse effects of the mode of ingestion:* Nicotine and cannabinols are ingested by smoking, causing lung damage. Injection users of opiates, cocaine, or amphetamines risk sepsis, hepatitis, and AIDS from contaminated needles.
3. *Adverse effects of the degraded lifestyle of problem users:* Poverty, an unhygienic lifestyle, and desperation make problem users particularly liable to infection and disease from contaminated needles, as well as poisoning by adulterants to and accidental overdose of street heroin. In 1989, a "crack baby" scare erupted, attributing low-birth-weight babies to the smoking of crack (smokeable cocaine) by poor, inner-city mothers. Further investigation traced the cause not to crack per se but to the heavy-drinking, heavy-cigarette-smoking, malnourished lifestyle of problem users (Cotton 1994).

Addiction. Addiction is a slippery concept. The Latin root means "being led to." Addictive behavior belongs on a continuum that includes normal behavior like eating when hungry or falling in love. The most important component of addiction may be psychological: addicts feel a powerful urge to take some pleasurable action—to light up a cigarette, drink a scotch, eat a box of chocolates, gamble, go jogging, go shopping, make love, or snort cocaine! The urge is generally triggered by certain events or situations; for example, a smoker feels the urge to light up at the end of a meal. Some drugs, including alcohol, nicotine, caffeine, and opiates, are physiologically as well as psychologically addictive for some heavy users in that they produce withdrawal symptoms—adding a stick of physical discomfort to the pleasurable carrot encouraging repetitive use.

Addiction and problem use. The relationship between problem use and addiction is complex and depends on the substance, on the individual, and on the individual's culture and situation. As a rough generalization, most but not all problem users are addicted to alcohol, hard drugs (opiates or stimulants), or both. But the converse does not hold. While most alcohol addicts are problem users, many hard-drug addicts are not problem users. Nicotine and caffeine addicts are rarely problem users either. The difference between nonproblem and problem addicts lies in the extent to which the addicts control or yield to urges with immediate adverse consequences.

1. *Nicotine:* Nicotine is by far the most physiologically addictive drug. Most people who try cigarettes quickly get hooked, and most smokers cannot go even a few hours without experiencing a "nic fit." Although

they may incur future health effects, nicotine addicts lead normal lives. They do not suffer the feelings of worthlessness, hopelessness, and drug obsession characteristic of problem users. (This might not always be the case were cigarettes illegal and expensive. I once read an essay by a woman who marooned herself in a country house without cigarettes in an effort to quit. Within a day she found herself walking along a highway collecting butts tossed from cars.)

2. *Alcohol:* Obviously, most alcohol drinkers are neither addicts nor problem users. Those who drink heavily and regularly enough to become physiologically addicted are also thereby impaired enough to count as problem users. Some nonphysiologically addicted binge drinkers probably qualify as problem users because of their degraded lifestyle.
3. *Cocaine and amphetamines:* Cocaine and amphetamines are not physiologically addictive, but they are psychologically addictive to some users, especially people with a poor self-image. These stimulants produce a sense of alertness, confidence, and well-being that such users feel a strong urge to repeat. Heavy users may binge for days, then sleep it off. Many regular cocaine or amphetamine users still lead relatively normal lives, keeping their daily intake at a level that does not seriously impede their productivity or bingeing only on weekends. My barhopping friends tell me this is the cocaine use pattern of many young Wall Street traders.
4. *Heroin, morphine, methadone, and other opiates:* First, most users do not become addicts, and even addicts often voluntarily stop use for days or weeks. (Opiate withdrawal symptoms are less severe than those for nicotine.) Nonaddicts include occasional smokers of heroin, so-called chippers. Pain patients may take regular, large doses of opiates without becoming psychologically addicted, although they do experience withdrawal symptoms. Second, unlike alcohol addiction, opiate addiction does not necessarily impair normal functioning. This is obviously true of methadone, which suppresses withdrawal effects without giving a "rush." It is also true for heroin and morphine. For example, Great Britain allows physicians to prescribe heroin. While few actually do so, there are nonetheless several hundred registered heroin addicts who have received prescribed heroin for as long as forty years while leading otherwise ordinary lives. It is one of the dirty little secrets of medicine that some practicing physicians and nurses are opiate (mostly Demerol) addicts—often with little apparent detriment to themselves or their patients.
5. *Marijuana:* Marijuana is not physiologically addictive and does not appear to hook users psychologically as does cocaine. Nonetheless, some

perpetual "pot heads" may rate as problem users to the extent that they neglect the concerns of their normal lives and try to escape feelings of worthlessness and hopelessness in a cloud of smoke.

Relative Drug Ratings. In 1994, two doctors compared heroin, cocaine, and marijuana with three legal drugs—alcohol, nicotine, and caffeine—as shown in table 9A.1.

Table 9A.1. Two Doctors[1] Compare the Seriousness of Six Well-known Drugs

1. Henningfield Ratings (1 worst; 6 least serious)

Substance	*Withdrawal*	*Reinforcement*	*Tolerance*	*Dependence*	*Intoxication*	*Total*
Heroin	2	2	1	2	2	9
Alcohol	1	3	3	4	1	12
Cocaine	4	1	4	3	3	15
Nicotine	3	4	2	1	5	15
Marijuana	6	5	6	6	4	27
Caffeine	5	6	5	5	6	27

2. Benowitz Ratings (1 worst; 6 least serious)

Substance	*Withdrawal*	*Reinforcement*	*Tolerance*	*Dependence*	*Intoxication*	*Total*
Heroin	2	2	2	2	2	10
Cocaine	3	1	1	3	3	11
Alcohol	1	3	4	4	1	13
Nicotine	3	4	4	1	6	18
Caffeine	4	5	3	5	5	22
Marijuana	5	6	5	6	4	26

Source: Steven C. Markoff in consultation with Drs. Henningfield, Benowitz, and Perrine, 1994.

[1] Jack E. Henningfield (Ph.D. in psychopharmacology), formerly of the National Institute on Drug Abuse, and Neal L. Benowitz, M.D., of the University of San Francisco, rank six common substances in five problem areas.