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Lessons from the Economics of Crime

What Reduces Offending?

edited by
Philip J. Cook, Stephen Machin, Olivier Marie, and Giovanni Mastrobuoni

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Series Foreword

This book is part of the CESifo Seminar Series. The series aims to cover topical policy issues in economics from a largely European perspective. The books in this series are the products of the papers and intensive debates that took place during the seminars hosted by CESifo, an international research network of renowned economists organized jointly by the Center for Economic Studies at Ludwig-Maximilians-Universität, Munich, and the Ifo Institute for Economic Research. All publications in this series have been carefully selected and refereed by members of the CESifo research network.

2 Drug Prohibition and Its Alternatives

John J. Donohue III

2.1 Introduction

Illegal drugs, alcohol, and tobacco impose large social costs on society, here and in every major developed country. Interestingly, each of these is estimated—albeit crudely—to impose about $200 billion per year in social costs in the United States (although the costs come in very different forms depending on the nature of the legal regime and enforcement policy). These three substances also share some interesting characteristics: many Americans have a serious attachment to one or more of them, and a sizable proportion of the consumers use one or more of these in a responsible manner, hence imposing little-to-no external costs to society. The bad news is that a nontrivial subset also uses them irresponsibly, and this irresponsible use tends to create very high social costs. This problem is exacerbated by the fact that restricting use of drugs, alcohol, and tobacco to only those who impose minimal social costs is extremely difficult.[1]

Cocaine and opiates first became criminalized at the federal level in the United States in 1914, followed by marijuana in 1937. The criminalization of these drugs has led to the modern "war on drugs," characterized by strict enforcement of drug violations and policing attempts directed at shutting down the drug trade. Scholars and policy makers, however, have questioned whether the "war on drugs" is really the optimal policy, with some suggesting that legalization and regulation may be a better alternative. A remarkable feature of this debate is that strong support exists for almost any position in the drug-policy debate.

The positions of Milton Friedman, Nobel laureate economist, and Robert Weiner, spokesman for the White House National Drug Policy Office from 1995 to 2001, embody the poles of the ongoing debate. Milton and Rose Friedman, famous promoters of free markets and

choice, argued for the complete and unregulated legalization of illicit drugs:

> However much harm drugs do to those who use them . . . seeking to prohibit their use does even more harm both to users of drugs and to the rest of us. . . . Legalizing drugs would simultaneously *reduce the amount of crime* and improve law enforcement. It is hard to conceive of any other single measure that would accomplish so much to promote law and order.[2]

Robert Weiner, former head of the White House National Drug Policy Office, on the other hand takes a staunch stand in a favor of the "war on drugs." In a June 14, 2009, address, Weiner[3] said: "Drugs have not 'won the war.'. . . America's overall drug use has declined almost by half in the past three decades. . . . In addition, cocaine use, including crack—the source of much of the former record-high violent crime numbers—is down 70 percent. Want to go back?"[4] Weiner clearly stands by his position, arguing that a "comprehensive anti-drug strategy" has and will continue to produce important social gains. Further Weiner denounced the prospect of legalization in fiery terms:

> Legalization would be a catastrophe. [T]here are an estimated 15 million alcoholics in this country and 5 million drug addicts; do we want the 5 to become 15? Parents, police, and the American people know that taking away the incentive of the normative power of the law would increase drug use and related car crashes, school dropouts, and work absences. That is why the law has remained in place. . . . Hospital emergency rooms would be flooded, and crime would return to the crisis levels of the 1970s and '80s, when drug use was at its highest. Domestic violence and date rape would be substantially higher. The majority of arrestees in 10 major American cities recently tested positive for illegal drugs, a remarkable indicator of a link between drugs and crime.[5]

The difficult task is first to assess if either of the extreme positions championed by Friedman and Weiner is correct or if there is some intermediate position, such as grudging legalization with heavy restrictions or retaining criminalization while pulling back from the "war," that would better promote wise social policy.

2.2 Breaking down the Polar Positions

Both of the polar positions show a degree of theoretical elegance. On the one hand, Friedman's position stems from his ideology that individual choices must be honored, and that societal gains (think in terms of the likely consumer surplus to be gained by rational actors in a framework of neoclassical economics) are to be had from this emphasis on individual choice. Further Friedman draws on evidence from the US experience with prohibition and re-legalization of alcohol to suggest that once legal, the drug trade will become much less violent, saving society from the massive social costs of such violence. And finally, Friedman notes that by legalizing drugs, we would eliminate the massive policing and incarceration costs of prohibition.

On the other hand, Weiner accurately argues that drug consumption alone will produce major social costs if not inhibited by law. From this he argues that drugs should be illegal because the socially optimal level of drug consumption is low or close to zero. Moreover, *given* that these drugs *are* criminalized, Weiner would presumably argue, we develop and propagate *respect for the law* by rigorously enforcing this criminalization.

This fundamental disagreement raises the question of what best promotes *respect for law?* Given prohibition of drugs as the currently established rule of law, theory might suggest that a war on drugs, as suggested by Weiner, would best promote respect for the law. However, if prohibition/criminalization is highly contested, a war on drugs may well breed disrespect for the law, as Friedman argued.

2.3 Applying Further Economic Theory—Externalities and Internalities

Free market and libertarian principles of consumer choice obviously favor the Friedman approach, as these were the theoretical building blocks for his position. The libertarian's case for the Friedman approach, moreover, is dramatically strengthened if one believes the external social costs of drug consumption at the level that would occur under Friedman's laissez faire approach are no greater than the costs of enforcing the criminal prohibition of drug use.

Of course, if the evidence supports the existence of large and unavoidable externalities and internalities, the case for governmental action is strong (although a libertarian might question the possible relevance or existence of "internalities"). Drug use clearly produces *negative externalities*, or social costs that accrue to nonmarket participants, in the form of various harm to the dependents of drug addicts, cost of accidents, missed work, certain costs of medical treatment, and so on. The concept of *internalities*—costs that accrue to drug users but that the users fail to account for in making their consumption

decisions—are less frequently discussed, but may be quite large. For example, UCLA Professor of Public Affairs Mark Kleiman argues that a teenager who starts to smoke at age 18 rarely considers that years down the road this choice may hurt the teen's future 12-year-old son when the smoking causes the then-parent's premature death.[6] Yale Professor of Psychiatry Richard Schottenfeld fleshes out this line of thinking and applies it to drug addiction. He stresses that the survival of the human species has depended on love relationships that make a child the special focus of a parent's attention. Drug addiction can supplant that focus as the drug becomes the key love relationship and central focus of the addict's life, much to the detriment of the addict's family.[7] Internalities can result in severe harm for the drug user (potential harmful brain alterations) or to the user's family or even work associates.

Considering these elements, some form of market correction, whether it is high taxes on illegal drugs or prohibition altogether—policies that make the current cost to user of consumption more accurately reflect the long-term and social costs—seems more socially optimal than the free market libertarian policy of Friedman.

2.4 Alternative Approaches

In addition to the polar theories of legalization and a "war on drugs," less extreme alternatives have been suggested. Two intermediate positions might include (1) prohibition without an "all out" war on drugs and (2) legalization coupled with policies of containment via regulation. Prohibition without war would entail less draconian enforcement and more educational programs about the harms of drugs. Containment policies via regulation would likely include taxes, sales restrictions, advertising restrictions, and age-based prohibition, much like the regulations we see in the modern alcohol and tobacco markets (e.g., sales prohibited to those under a given age). Since current alcohol taxes are likely to understate the optimal Pigovian taxes—although concerns about inviting the involvement of organized crime always constrain tax rates—the likely optimal taxation and regulatory regime for cocaine and heroin would likely be far stricter than current alcohol policy. An interesting demand-side alternative policy suggestion is one of legalization followed by targeting of "problem users." Kleiman has discussed the option of identifying "problem users" and presenting them with the choice between immediate sobriety and jail.

2.5 Determining the Costs of Drug Consumption, Addiction, and Incarceration

In a 2007 article published in *The Lancet*, several collaborating medical professors assembled a panel of 8 to 16 scientific, legal, and law enforcement experts to rate 20 substances along 3 dimensions—physical harm, dependence, and social harms.[8] Correlation in scoring between psychiatrists and independent experts was generally high, implying a consensus between the two, and the final averaged scores actually ranked alcohol and tobacco, number three and ten, respectively, in the list of most harmful drugs—both ranking higher than marijuana, which ranked twelfth (see figure 2.1):

The Office of National Drug Control Policy (hereinafter ONDCP) undertook a landmark study in 2002, seeking to estimate the economic cost of illegal drug use in the United States.[9] In particular, the study

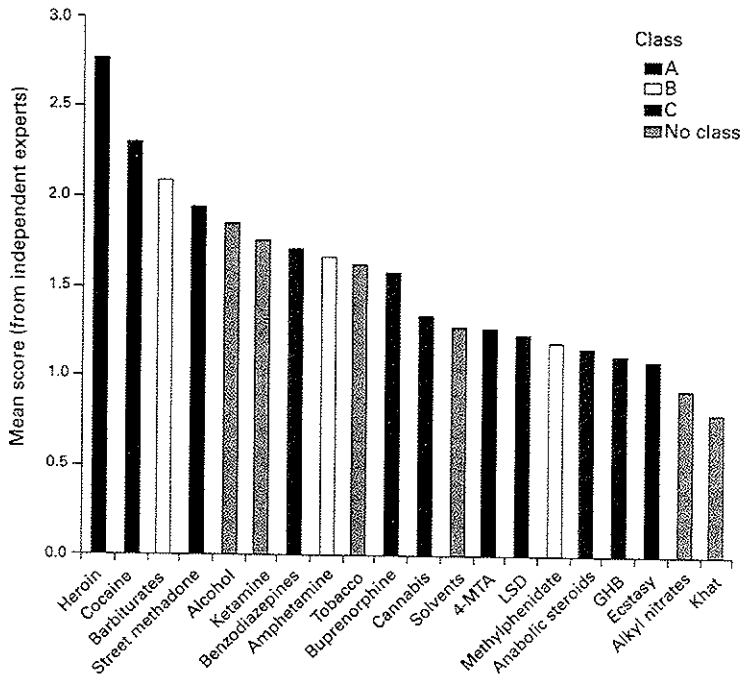

Figure 2.1
Mean harm scores for twenty substances Source: Nutt et al. (2007, p. 1050)

evaluated lost productivity, health effects, and crime-related costs including policing expenditures and incarceration. The study estimates the cost of illegal drug use was $217 billion, in 2008 dollars.[10] Two similar studies estimate the cost of alcohol use at $244 billion and the cost of smoking at $195 billion,[11] again in 2008 dollars.[12]

About 56.6 percent of the estimated cost of illegal drug use was crime related, and over two thirds of these crime-related costs were from lost productivity for those incarcerated on drug charges and from costs related to the criminal justice system. On the other hand, health costs accounted for a very small 8.7 percent of the total estimated cost of drug use. The important point to note here is that there clearly is a tradeoff between enforcement and health-related costs—more enforcement will reduce consumption and thereby reduce consumption-related costs, while simultaneously driving up enforcement costs.

Of course, there are problems with all of these cost estimates. For example, estimates of tobacco-related deaths sum all deaths with tobacco-related causes, whereas estimates of alcohol and drug-related deaths sum only the "death certificate" numbers of these deaths, which often don't take into account deaths or injuries caused by drug use in the distant past, such as strokes caused by prior cocaine use. Hence alcohol and illegal drug-related death numbers may be understated relative to tobacco deaths. Moreover data on drug consumption is fundamentally imperfect. Still the findings of these studies are strong enough to raise concerns about overall US drug policy, and force us to ask whether a "war on drugs" is truly optimal.

If we accept the premise of the *Lancet* article that many drugs, including alcohol, are more harmful and impose higher societal costs than marijuana, a key question moving forward is whether, for example, alcohol and marijuana are complements or substitutes. On the one hand, there is some debate in the academic literature over this question, with researchers finding empirical support for both positions. Pacula (1998a, 1998b) and Williams et al. (2001) find evidence that alcohol and marijuana function as complements using both NSLY and HSPH College Alcohol Survey data.[13] On the other hand, several studies have concluded that drugs and alcohol function as substitutes, including Conlin et al. (2005), Thies and Register (1993), Chaloupka and Laixuthai (1997), and Cameron and Williams (2001).[14] Indeed, since the evidence supporting the substitution hypothesis was on the whole methodologically stronger—particularly the panel data analysis of Conlin et al. (2005)—it is certainly worth considering whether society might benefit

from shifting consumption away from alcohol and toward marijuana. But we would need both a sounder estimate of the relative harms and costs of marijuana than *The Lancet* harm rankings and more precise estimates of how consumption of alcohol would be altered by weakening the laws against marijuana consumption before actually adopting a policy to shift consumption from one substance to the other.

2.6 Cross-Country Comparisons of Substance Abuse

A study[15] comparing countries' drug use helps illuminate the US "drug problem." Using *WHO World Mental Health Surveys*, Degenhardt et al. (2008) found that the United States population ranks number one in the world in percentage of respondents ever using cannabis, ever using tobacco, and ever using cocaine. Notably, the US respondents topped other countries in cocaine use by a huge margin—16 percent of US respondents indicated they had used cocaine; the next highest was New Zealand, at just over 4 percent (these results are shown graphically below). The United States is far less of a pathological outlier, however, if one looks at measures of current use rather than the figures for lifetime ever-use, ranking fourth in annual prevalence of cannabis use and third in annual prevalence of cocaine use.[16] Weiner suggests that these numbers showing lower *current-use* than *ever-use* are evidence that the war on drugs is working.

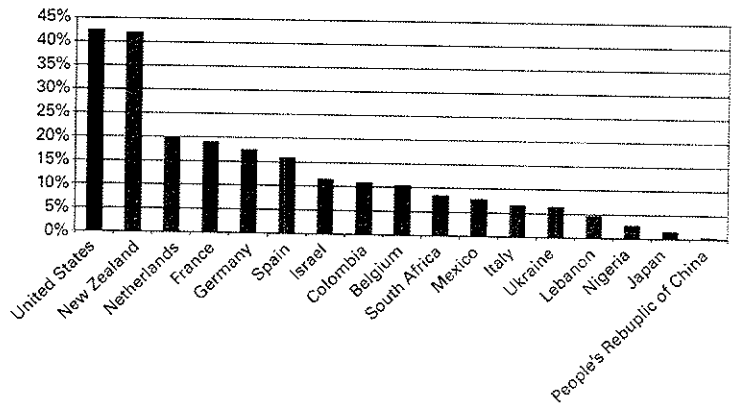

Figure 2.2
Percentage of respondents ever using cannabis in 2001 to 2004, by country Source: Donohue et al. (2011, p. 221)

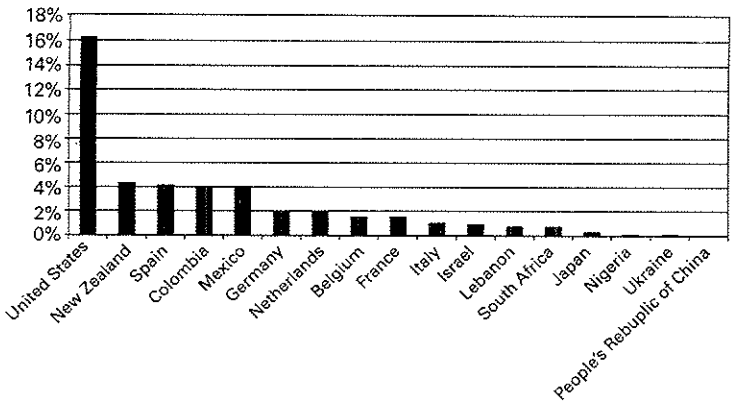

Figure 2.3
Percentage of respondents ever using cocaine in 2001 to 2004, by country Source: Donohue et al. (2011, p. 222)

Indeed illegal drug use in the United States is down substantially from the late 1970s, the height of US illicit drug usage.[17] The trend in reported recent marijuana use for high school seniors does show some interesting trends, peaking in 1978–79, dropping steadily until about 1992, rising from 92 to 98, and then flattening out with a slight downward trend. An important question here is whether these numbers reflect actual use tendencies or reporting tendencies. It seems highly plausible that Reagan's "say no to drugs" campaign in the early 1980s increased the tendency of twelfth graders to simply say "no" when asked if they had recently used drugs, regardless of whether they actually had or not. Still the size and persistence of the drop gives reason to believe that it does reflect a trend of decreased usage over time. The percentage of twelfth graders reporting to have recently used alcohol or cigarettes has also fallen since the mid-1970s, from over 70 to 40 percent for alcohol and from almost 40 to about 20 percent for cigarettes, as shown in figures 2.4 and 2.5.[18]

So, even if Weiner were correct that the all-out war on drugs reduced drug use, the evidence from improvement in controlling consumption of the legal drugs suggests that steps other than prohibition can be effective—apparently, raising the drinking age and increasing tobacco taxes have helped generate equal or greater drops in the usage levels of these respective substances.

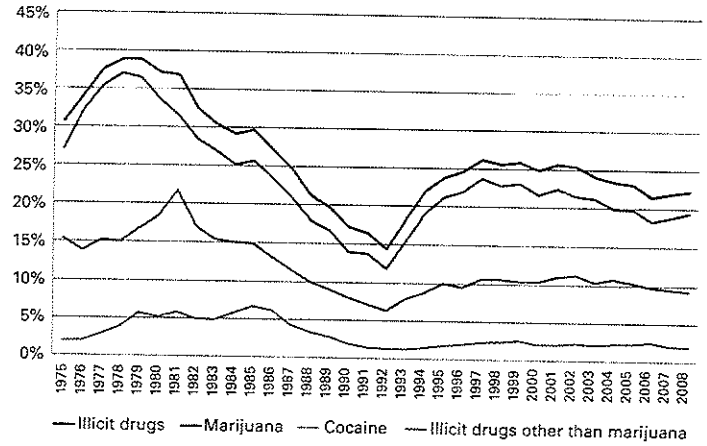

Figure 2.4
Percentage of 12th graders reporting use of various illicit drugs in past thirty days Source: Donohue et al. (2011, p. 229)

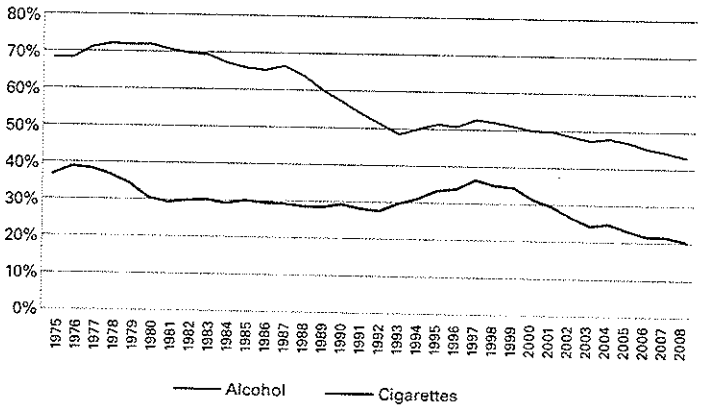

Figure 2.5
Percentage of 12th graders reporting use of alcohol and cigarettes in past thirty days Source: Donohue et al. (2011, p. 272)

2.7 Other Features of Drug Use and Abuse: The "Top-Heavy" Distribution and Addiction

Across a variety of drugs and substances, it is generally accepted that a small percentage of users account for a very large percentage of the total consumption and/or abuse—this is what we call a top-heavy distribution.[19] Besides this distribution, the nature of addiction presents an interesting caveat in analyzing drug use and the drug market. A study conducted by the Institute of Medicine of the National Academies has published findings on what percentage of those who try a given substance become dependent. Tobacco ranks first at over 30 percent, followed by heroine—over 20 percent; cocaine—over 15 percent; alcohol—15 percent; anti-anxiety drugs and marijuana bring up the rear, each at under 10 percent.[20]

The role of addiction or dependence in this debate is crucial—yet understanding how to conceptualize these ideas with policy-making in mind presents a challenge. A key question that arises here is how much addiction changes behavior and to what extent it alters one's response to incentives. For example, how responsive are addicts to price changes? Are addicts rational welfare maximizers (as decision-makers are generally assumed to be in economic theory), or are they irrational or myopic?

Becker and Murphy (1988)[21] develop a rational addiction model, which lays a framework for reconciling rational decision-making with

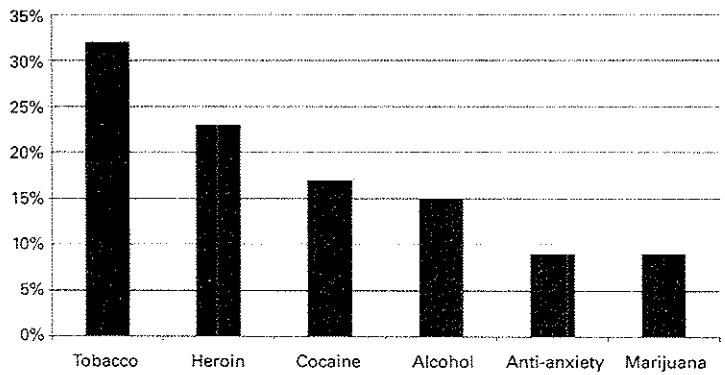

Figure 2.6
Of those who tried, percentage that become dependent by substance Source: Donohue et al. (2011, p. 260)

addiction—they argue that addictions can arise from foresighted welfare maximization, assuming that addicts are better off by starting to consume drugs than they otherwise would have been. This is a very libertarian idea. Based on these assumptions, the model states that demand will be responsive to price, but more so to long-term changes than short-term ones. But is this model really correct? Other models of addiction generally treat addicts as irrational, or at the very least having time-inconsistent preferences. Understanding the nature of addiction and how usage would respond to price changes is very relevant to the legalization debate, as arguments for legalization often hinge on the argument that price mechanisms will be effective measures for reducing use.

2.8 America's Punitive Approach to Illegal Drugs

To give some context for further discussion of the war on drugs, consider the following: In the United States in 2007, there were 1.8 million arrests for drug-abuse violations, compared with 1.4 million DUI arrests, 1.3 assault-related arrests, and 1.1 larceny theft arrests. Possession arrests account for about 82 percent of all drug abuse arrests, with marijuana and heroin/cocaine possession making up 42.1 and 21.5 percent, respectively, of all drug-related arrests.[22] Surprisingly, the rate of US marijuana arrests per 1,000 users, 31, is similar to that of many other countries—34 in Germany, 26 in France, 44 in Austria, 20 in the United Kingdom, and 24 in Australia.[23]

Mark Kleiman provides a nice illustration of the difficulties in trying to curtail consumption through a purely punitive approach. For example, would it be effective simply to deter the drug trade by executing drug dealers? Occupational hazards data show that in a given industry, for each work-related death the industry's wage bill must rise by $1 to $5 million.[24] So let's take the high-end estimate and assume we execute 100 drug dealers—this would raise drug industry costs by $500 million based on the occupational hazard figures. In the $50 billion illegal drug trade industry, this would be a 1 percent cost increase, presumably leading to a 1 percent increase in drug prices. Even 1,000 executions would raise drug prices just 10 percent. Assuming inelastic demand, a generally accepted assumption, this would result in only a minor drop in consumption. An alternative would be to only execute drug dealers who kill. Of course, this may bring about the perverse effect of a higher drug-dealer population if drug dealers who kill tend to kill other drug dealers.[25]

This discussion relates to the "big question" of the US punitive approach to the war on drugs: How did prices for US illegal drugs fall so sharply in the face of such intense enforcement?[26] A portion of the price drop has undoubtedly come from decreases in demand for drugs. Some of the price drop probably reflects better productivity in product distribution. However, the rest of the price drop may reflect efficiency gains in circumventing enforcement—an alarming thought given the high costs of the war on drugs.

On the other side of the debate, another key question arises: How can or could we predict the impact of legalization? Evidence here is mostly impressionistic—there has been little policy variation for the currently illegal drugs in the United States over the past 50 years, and hence there is no panel data to answer the question. Proponents of legalization often draw on anecdotal evidence from the prohibition era to argue that the increase in crime during prohibition occurred directly because of the criminalization of alcohol. Owens (2011), however, offers evidence to the contrary—exploiting state-level variation in prohibition policy, she finds that violent crime trends were better explained by urbanization and immigration, rather than criminalization/decriminalization of alcohol.[27]

Renowned libertarian Jeffrey Miron, on the other hand, draws strong conclusions about the connection between the criminalization of drugs and violent crime using evidence from cross-country comparisons.[28] His logic here is straightforward: homicide rates in Western Europe are just 10 to 20 percent of those in the United States. Miron argues that Colombia, where domestic and international efforts to prohibit drugs are considerable, experiences homicide rates about 8 to 10 times those of the United States. Miron concludes that stronger prohibition efforts lead to more violence, and that more demand-side policies, as used in Western Europe, will reduce violence. But is it fair to attribute differences in crime rates in Western Europe and the United States and in South America primarily to policies toward illegal drugs?

Moreover evidence from the United States in the past twenty years somewhat refutes Miron's suggestion. Since the mid-1990s the "Miron Drug Prohibition Enforcement Index"[29], which measures the aggressiveness of drug enforcement, has risen consistently, yet the homicide rate has fallen over that time. Most qualitative and empirical evidence suggests that this is a result of illegal drug markets becoming more orderly in the 1990s, and this may suggest that the crime drop we would get from legalization would be smaller than the one we got, for instance, following prohibition.

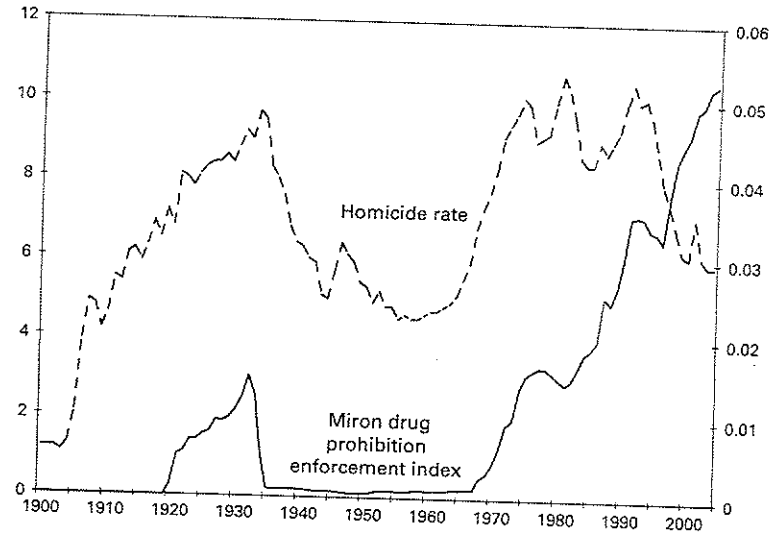

Figure 2.7
Homicide rate versus drug prohibition enforcement index in 1992 dollars Source: Donohue et al. (2011, p. 263)

2.9 Some Empirical Investigations of the Demand versus Supply-Side Question

Caulkins et al. (1997) presents an important evaluation of the cost-effectiveness of opposite types of drug policy.[30] Overall, the authors find that a demand-side policy—drug treatment—was more effective than the aggressive prohibition policy of minimum sentences. Moreover the authors find the differences in cost-effectiveness to be staggering: each additional $1 million spent on treatment programs reduced net cocaine consumption by 103.6 kg, while an additional $1 million on longer sentences reduced consumption by just 12.6 kg.

Then again, the 1995 drop in supply of methamphetamines generated by the DEA's shutting down of major suppliers allowed for empirical testing of direct supply-side prohibition measures. Dobkin and Nicosia (2009) estimate that the DEA caused an immediate 50 percent drop in supply, leading to a 50 percent drop in meth-related

hospitalizations, a short-run tripling of prices, and a drop in purity from 90 to 20 percent.[31] It is important to note, however, that purity recovered to 85 percent of its original level within 18 months, suggesting that enduring supply-side interventions are difficult to engineer. The authors also find that robberies increased about 9 percent in the year following the supply drop, but that no other crime category was affected, and that there was little substitution to other illegal drugs or alcohol. This suggests that the primary contribution of meth consumption to crime came not from consumption (which fell by 50 percent) but likely through the need to steal to maintain a habit as prices rose.

Last, there exists varying evidence on the impact of the decriminalization of illegal drugs, a popular policy in European and South American countries in the past decade. In particular, I would like to call attention to the case of Portugal, which decriminalized drugs in 2001, yet still continues to have one of the lowest rates of cannabis and cocaine use over an entire lifetime, 8 and 0.9 percent, respectively. Moreover the percentage of secondary school students reporting use of common drugs has declined since 2001, the number of new HIV/AIDS cases among drug users has fallen, and the country has not become a destination for drug tourism.

Michael Specter recently profiled the drug situation in Portugal in an issue of *The New Yorker*, summarizing:

> In most respects, the law seems to have worked: serious drug use is down significantly, particularly among young people; the burden on the criminal justice system has eased: the number of people seeking treatment has grown; and the rates of drug-related deaths and cases of infectious diseases have fallen.[32]

Specter quotes Miguel Vasconcelos, chief psychiatrist at one of Portugal's major treatment centers, who says of the new decriminalization policy: "this is an alternative that does get people off the streets, reduces the rates of HIV infection, and lowers crime. It is humanistic but also pragmatic."[33]

Critics, however, have argued that the data does not necessarily support the conclusion that decriminalization was the reason for increases in drug users seeking treatment; increases in drug treatment center accessibility coincided with the decriminalization policy. These critics also offer moral arguments in opposition to Portugal's approach to drug use, claiming that decriminalization and easier access to treatment and methadone supplements has decreased incentive to get off

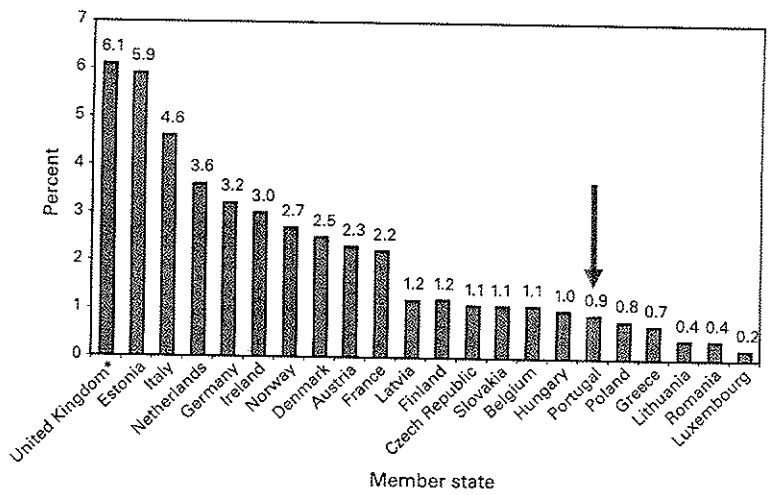

Figure 2.8
EU cocaine prevalence by country Source: Instituto da Droga e da Toxicodependência de Portugal (Institute on Drugs and Drug Addiction of Portugal 2007, slide 10)

drugs altogether and increased the portion of population living with managed addictions.[34]

The Netherlands, where small transactions (5g or less) of cannabis are decriminalized, shows somewhat similar evidence to that of Portugal. Lifetime use of marijuana has continued to be lower than in the United States and several other EU member countries. Decriminalization also has had the desired effect of keeping users out of black markets; Abraham (1999) finds that among users over age 18, 48 percent of cannabis purchases occurred in coffee shops and 39 percent occurred between friends or family.[35]

Some US states made steps in this direction in the 1970s, choosing not to decriminalize cannabis, but to depenalize it, downgrading marijuana possession to a misdemeanor. Evidence of the effect of this depenalization has been inconsistent, but most studies find little to no effect. The effect of this type of depenalization is debated: some argue it may help reduce violent crime through a simple economic mechanism: Lesser penalties for drug sales would reduce the risk of engaging in the drug trade, thereby causing new sellers to enter the market, driving down profits, and lowering the stakes of drug-related disputes. Others

argue that lower penalties will increase demand and stimulate more illegal activity as gangs vie for the new customers.

On one hand, because Portugal is a smaller, more family-oriented country and the United States is a stressed country as a whole, perhaps Portugal's experience with drug decriminalization cannot offer us much guidance on drug policy because the countries are simply too different. One might think that these cultural differences between the United States and Portugal, coupled with the considerably higher rates of US drug use captured in figure 2.8, indicate that the United States is simply more prone than Portugal to addiction and drug abuse. But a comparison of alcohol consumption in the two countries raises doubts about this explanation.

Since data on alcohol consumption tend to be more reliable (because people are more willing to honestly report legal rather than illegal activity), it is worth investigating the degree of alcohol abuse in the two countries as a possible proxy for how prone to substance use and abuse the two countries are.

In 2003 (the most recent data for which both US and Portugal data are available), Portugal experienced about 30 liver cirrhosis deaths per 100,000 population, 50 percent more than in the United States. Similarly per capita alcohol consumption among drinkers was almost twice as high in Portugal as in the United States at 27.45 liters of pure alcohol per drinker compared with just 14 in the United States.[36] Cortez-Pinto et al. (2010) affirm that high liver cirrhosis mortality is indeed the result of overdrinking, concluding that alcohol is a "heavy economic burden for the health system" in Portugal.[37] The data presented here suggest that Portugal may engage in more heavy drinking than the United States, and that perhaps the United States is not a country inherently more prone to substance abuse than other countries. Of course, it is not known whether a society's predisposition to substance abuse is universal, or whether some factors make Portugal more prone to alcohol abuse and less prone to illegal drug abuse, and vice versa for the United States.

2.10 Moving Forward

It should be clear that the issues presented by America's drug problem are complex. In particular, though evidence from other countries tends to focus on cannabis use, cocaine is the single largest contributor to the social costs of drugs in the United States. Caulkins and Kleiman (2007)

estimate that two-thirds of the social costs of illegal drugs in the United States are accounted for by cocaine.[38] However, the most policy-relevant debate today is over legalization/decriminalization of marijuana. These social cost estimates suggest that legalization of marijuana may have less of an upside potential than a broader legalization/decriminalization, but it likely carries far smaller downside risks than, say, a Portugal-style legalization of cocaine.

Still a relevant question is why is there little popular support for legalization of marijuana? Considering the means of drug distribution leads us to one potential answer. Currently the costs of illegal drugs are borne by the government (via spending on enforcement) and by those involved in the drug trade—mostly the poor and minorities. Decriminalization or legalization would probably both reduce the cost borne by the government and increase marijuana usage, thus shifting a higher proportion of the consumption-oriented social costs of marijuana use to the middle/upper classes. Another potential answer, and a very simple one, is the prevalence of moral opposition to drug use in the United States—Specter writes on this point, "It is common in the United States to judge drug addiction morally rather than medically, and most policy flows from that approach."[39]

Further, as discussed earlier, the lack of serious or reliable evidence on the subject prevents accurate estimates of the impact of any radical change in policy. In particular, changes in the market for a particular drug may generate a major cross-substance substitution effect, but we cannot predict this with a significant degree of certainty. This problem is exacerbated by the fact that the implementation of a new policy would be crucial, and again, we have little to no information to point us in the direction of a sound implementation strategy. Hence, any stark change in drug policy would be to some degree a "shot in the dark," despite the considerable research and predictions based on logic or theory.

So, what should we do? I do draw some tentative conclusions and offer some policy suggestions. The evidence suggests that a free market approach to drugs and the US style war on drugs are both suboptimal policies—we would be better off with fewer in prison if nothing else. As for cannabis, eliminating the federal ban would probably produce important gains in terms of lower enforcement costs and fewer unnecessary incarcerations. States should be allowed some policy variation (an added benefit of such variation would be new data with which to analyze the issues surrounding drug control), but the federal

government should treat marijuana as it does alcohol in the National Minimum Drinking Age Act of 1984, so that states would at least prohibit young brains (those under 21) from legal access to marijuana. Taxes on marijuana potency would further be set high (and on alcohol ought to be raised), and these tax revenues should be used to enforce prohibition of under-age consumption, discourage use via counter-advertising, and fund addiction treatment.

But what should we do about harder drugs? This is obviously a more difficult question. Before making any serious change here, we should conduct more rigorous evaluations of the new decriminalization of harder drugs in Europe and Latin America. If these policies are in fact successful in constraining consumption to acceptable levels, then perhaps we ought to consider going in the decriminalization direction as well, or even consider legalization and heavy taxation, per the Becker recommendation.

Oddly the war on drugs may be rational in the sense that though it is very costly, it imposes much of these costs on criminals and drug traffickers, as well as on other countries, rather than forcing the average American to bear the social costs of drugs beyond paying tax dollars on enforcement and incarceration. Still the best reading of the current evidence suggests that aggressive prohibition and the war on drugs are suboptimal policies. Even if every element of the war on drugs remained unchanged but we dropped our current prison population of incarcerated drug offenders from 500,000 to 400,000, this would represent a step in the direction of reducing total social costs. How far we would benefit from such retrenchment is an interesting question. We need to pursue additional empirical and qualitative analyses with the ultimate goal of forging a new and more effective approach to drug policy.

Notes

1. Is there "responsible" use of tobacco? Since tobacco may be the most addictive substance and its use causes 300,000 to 500,000 deaths per year, it may be that the scope for responsible use is limited. One could at least imagine that occasional smoking could be possible for some without lapsing into addiction and thereby imposing significant social costs through the elevated risk of premature death. Occasional cigar smoking might fall into this category.

2. See Friedman (2009), appendix B at p. 186.

3. See Weiner (2009). Robert Weiner was then the head of the White House National Drug Policy Office.

4. A possible caveat here is that the numbers may reflect drops only in casual crack use; it is unclear that the number of heavy crack users dropped significantly.

5. Id.

6. See Kleiman (2011).

7. Richard Schottenfeld, via Leckman and Mayes; see Landi et al. (2011).

8. See Nutt et al. (2007).

9. See Office of National Drug Control Policy (2004), https://www.ncjrs.gov/ondcppubs/publications/pdf/economic_costs.pdf.

10. Id.

11. See Harwood (2000, p. 119).

12. The original cost figures as estimated in the respective studies were as follows: illegal drugs—$180.9 billion in 2002 dollars; alcohol—$184.6 billion in 1998 dollars; smoking—$138 billion in 1995 dollars. To ease comparison, I have converted each figure to 2008 dollars using the CPI-based inflation adjustment calculator provided by the Bureau of Labor Statistics, available at http://data.bls.gov/cgi-bin/cpicalc.pl. Figures are rounded to nearest billion.

13. See Pacula (1998a, b) and Williams, Pacula, et al. (2001).

14. See Conlin, Dickert-Conlin, and Pepper (2005); Thies and Register (1993); Chaloupka and Laixuthai (1997); and Cameron and Williams (2001).

15. See Degenhardt et al. (2008), which supplies data on cumulative use of alcohol, tobacco, cannabis, and cocaine.

16. See United Nations Office on Drugs and Crime (2009).

17. See Johnston et al. (2009), pp. 198–99, http://www.monitoringthefuture.org/pubs/monographs/vol1_2008.pdf.

18. Id.

19. See Manski et al. (2001, p. 60). See also Rydell and Everingham (1994).

20. See Kershaw and Cathcart (2009), citing Institute of Medicine of the National Academies.

21. Becker and Murphy (1988, p. 695).

22. See Bureau of Justice Statistics (2011).

23. See Boyum and Reuter (2005).

24. See Viscusi (1991).

25. See Kleiman (1988).

26. See Caulkins, Reuter, and Taylor (2005).

27. See Owens (2011).

28. See Miron (1999).

29. See Miron (2005).

30. See Cauklins (1997, p. 22).

31. See Dobkin and Nicosia (2009).

32. See Specter (2011, p. 36).

33. See Specter (2011) at 38.

34. See Specter (2011).

35. See Abraham (1999, pp. 3–4).

36. See World Health Organization (2011).

37. See Cortez-Pinto et al. (2010).

38. See Caulkins and Kleiman (2007, p. 564).

39. See Specter (2011, p. 45).

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3 Mechanism Experiments for Crime Policy

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3.1 Introduction

Randomized controlled trials are increasingly used to evaluate policies, including in the area of crime policy research. For example, solicitations for research proposals from the US Department of Justice's (DOJ) National Institute of Justice now regularly prioritize studies that randomize people to treatment or control conditions. This trend has been spurred in part by numerous independent groups—the Coalition for Evidence-Based Policy, the Campbell Collaboration, an international network of researchers hosted by the Norwegian Knowledge Center for the Health Services, the Poverty Action Lab, and Innovations for Poverty Action—that promote policy experimentation. Others however question the wisdom of this trend. A vigorous debate has arisen around the value of experimental methods for informing policy (e.g., Angrist and Pischke 2009, 2010; Banerjee and Duflo 2009; Deaton 2010; Heckman 2010; Imbens 2010). We argue this debate has often been framed too narrowly on experimental versus nonexperimental methods. An important distinction *between* experimental methods has been overlooked.

Suppose that a policy maker has already decided on using an experiment. She faces a design problem. Given a fixed budget, how should she design her experiment to maximize policy-relevant information? The answer seems obvious: replicate the policy as it would be implemented at scale, and randomly assign units (people or sites of the sort that would be targeted by the policy) to treatment and control conditions. The design challenges involve selecting the most cost effective units of randomization and the data collection strategies. We call the resulting experiments *policy evaluations*. In practice, most policy experimentation involves policy evaluations. Yet in some (practically