

Endangering the War on Terror by the War on Drugs

Deepak Lal

Introduction

The United States is currently engaged in two wars, one of which is less than a decade old, the other has lasted over a century.

The first, the “War on Terror” against Islamist fundamentalists began with Al Qaeda’s destruction of the World Trade Centre’s twin towers on Sept. 11, 2001. This led to the US invasion of Afghanistan, the defeat of the Taliban and the dislocation of Al Qaeda’s terrorist infrastructure, with Osama Bin Laden and his deputy Al Zawahari having to flee to the lawless badlands between Pakistan and Afghanistan. With the creation of a democratically elected government under Ahmad Karzai it might have been thought that the war on terror in Afghanistan had been won. But as the Taliban cum Al Qaeda scorpion had been squashed but not killed, it is now reemerging with the resurgence of the Taliban and its continuing support for the refurbished Al Qaeda terrorist network in the southern provinces (particularly in Helmand) of Afghanistan. This area also happens to be the major poppy growing area in Afghanistan, for conversion into opium and heroin. In 2007 it provided 92% of the world’s opium supply, whose farm-gate value was US\$1 billion.¹ It is this opium economy which is now (as in the past) providing the Taliban with the money for arms, and growing control over the southern opium growing provinces, by offering farmers protection from the opium eradication programs, spear-headed by the US as part of its War on Drugs. The first part of this paper

Deepak Lal is the James S. Coleman Professor of International Development Studies at the University of California, Los Angeles. He is grateful to Shogo Hamasaki for expert research assistance.

¹ UNODC (2008), *World Drug Report 2008*, p. 40.

shows why these drug supply control measures are likely to fail, with dire consequences for the success of the War on Terror.

The second part, therefore, examines the century old US led global War on Drugs which began with President Theodore Roosevelt. It examines whether in both theory and practice the supply control measures, which have formed a central part of this war, are justified, and if they have worked. It then presents the case for the US to cease its War on Drugs if it is not to jeopardize the much more serious War on Terror.

I THE AFGHAN POPPY ECONOMY AND THE TALIBAN RESURGENCE

1. History

The Afghan poppy economy is the result of the civil war which began with the Soviet invasion and occupation in 1979. With the rise of the Mujahideen resistance to Soviet occupation in 1979–80, most of the poppy growing areas, concentrated in the southern provinces of Helmand and Kandhar and the eastern province of Nangarhar, ceased to be under the central government's control. Opium production in 1932, (the first year for which quantitative estimates are available) was 75 tons of opium, produced on less than 4,000 hectares. By 1999 over 5,000 tons of opium was being produced from 92,000 hectares under poppy cultivation. This was the result of the civil war among the various factions in the 1990s after the Soviet occupation had ended. An opium economy developed, which combined opium production, and trading for arms by the various factions. Opium production accelerated from 14% between 1979 and 1989, to 19% between 1989 and 1994.²

The rural areas with about 85% of the population before the war, and with agriculture accounting for 68% of employment (in 1998), saw a severe dislocation of the rural economy. Between 1979 and 1989 nearly half to two-thirds of all villages were bombed. There was a fall in livestock of 77%, a destruction of $\frac{1}{4}$ to $\frac{1}{3}$ of the irrigation system, and one third of all

² UNODC (2003), *The Opium Economy in Afghanistan*, p. 90.

farms were abandoned. A third of the population fled the country and 11% became internal refugees. Total food production by 1988 had fallen to about 45% of the level before the 1979 Soviet invasion.³

The poppy economy offered various means of survival for those remaining in rural Afghanistan. First, it was highly profitable compared to other crops, though farmers reacted to the changing prices of opium in world markets by varying the area under poppy cultivation. Second, the poppy crop can be harvested earlier than wheat. Instead of growing wheat and merely obtaining additional fodder for livestock, growing poppies with their shorter period of cultivation allows farmers to also grow maize after harvesting the poppies. They can thus achieve double cropping, raising profitability. Third, poppies are weather resistant and hence a more reliable crop than wheat. Fourth, the opium is easy to store, transport and sell. It therefore also provides poor farmers a simple means to smooth income, and thence inter-temporal consumption, in the absence of any formal credit markets.

The civil war amongst the various Mujahideen factions, after the Russian withdrawal with the implosion of the Soviet empire in 1991, led to the development of a large illicit economy providing the infrastructure for transport, communications, arms and protection. This was required by the various warring factions to retain their areas of control. The Afghan Transit Trade Agreement, which allowed landlocked Afghanistan to import duty-free goods in sealed containers from Pakistan, provided the major conduit for the development of this illicit economy. In the 1980s the illicit trade also extended to the Persian Gulf, transiting through Afghanistan to Pakistan. This illicit trade infrastructure came to be used for drugs and arms, and with the Taliban (one of the factions in the civil war) seizing control in 1996 of all the country's roads, cities, airports and custom posts, they became the major agents of the opium trade, supported by the powerful transport mafias in Afghanistan and Pakistan, and clandestinely by the Pakistan secret services—the ISI.

With the victory of the Taliban, and its control over most of the country, there was some economic recovery. But the poppy economy continued to flourish, with opium production doubling between 1996 and 1999.⁴ The Taliban banned the production of cannabis, because “it is consumed by

³ Ibid.

⁴ UNODC (2003), *The Opium Economy in Afghanistan*, p. 92.

Afghans and Muslims”, but allowed production of opium, because “it is consumed by kaffirs (unbelievers) in the West and not by Muslims or Afghans”.⁵ The political reasons for letting farmers grow poppies were “because farmers get good prices. We cannot push people to grow wheat as there would be an uprising against the Taliban if we forced them to stop poppy cultivation. So we grow opium and get our wheat from Pakistan”, the head of the Taliban’s drug control force in Kandahar is reported to have said at the time.⁶

The Taliban also found the poppy economy profitable as they began charging a 20% Islamic tax on all dealers moving opium. With the Taliban firmly in control, in 1996 opium production soared. The large number of Pashtun refugees returning to their lands in the Taliban controlled southern provinces began cultivating the easiest and most lucrative cash crop available. It is estimated that by 2000 there were nearly one million Afghan farmers making over US\$100 million from poppy cultivation. The Taliban’s tax take was at least US\$20 million.⁷

In July 2000 under intense international pressure over its human rights record, the growth of the poppy economy and its support of terrorism, and fearing stronger UN sanctions, the Taliban banned opium production. This decision might also have been influenced by the traders backing the Taliban regime who stood to gain enormous profits on their opium stocks with the rise in price resulting from the production ban.⁸ The enforcement of the ban led to a fall in opium production in 2001 of 94%, back to the level of the 1980s. But with no alternatives to making a living, along with a severe drought, farmers faced extreme hardships. Overall crop production more than halved and livestock were severely depleted, reversing the economic gains that had been made since the Taliban came to power in 1996.⁹

⁵ Rashid (2000), p. 118, quoting the remarks of the head of the Taliban’s anti-drugs control force in Kandahar.

⁶ Ibid.

⁷ Rashid (2000), p. 119.

⁸ A US Congressional Research Service by R. F. Perle (2001) of October 5, 2001, just before the US invasion of Afghanistan, noted that after the Taliban ban on poppy cultivation in July 2000, the price of opium in Afghanistan jumped from \$44/kg to \$350–\$400/kg. It was estimated by UNDCP officials that before the ban up to 60% of opium stock had been stored for future sales. The UK government estimated that in 2001, 3,000 tons of opium were stockpiled in Afghanistan with a substantial portion held by bin Laden and his followers. There were also indications that bin Laden serves as a middleman for Afghan opium producers, using this income to finance terrorist training camps in Afghanistan.

⁹ UNODC (2003), *The Opium Economy in Afghanistan*, p. 93.

With the overthrow of the Taliban after 9/11, and the establishment of an interim government, a fresh ban on opium production was proclaimed in January 2002. But in that year the United Nations Office on Drugs and Crime (UNODC) found that opium production rose back to the level of 2000.

For the warlords, who still continue to rule much of Afghanistan, the opium economy provides a rich source of takings. In Helmand province the governor was removed when his central role in the opium trade was exposed, but his brother remained as deputy governor. As the UK MP, Adam Holloway (who was a British Army officer in Afghanistan) noted after a trip to Helmand province in early 2006: “I was told—actually by a police officer—that 99% of the police in Helmand are either opium producers, or traffickers or both, and that much of the opium is exported out of Afghanistan in police cars. The corruption engendered by the poppy has entwined the highest levels of government. Many small farmers despise the government and fear the Taliban, who promise to help fight the police while taking their cut of the opium crop, which provides them with income. So in practical terms, it is hard to draw a distinction between Taliban, warlord and drug trafficker—their interest is the same: instability”.¹⁰

The Taliban, with their bases in the lawless border area between Pakistan and Afghanistan, and with their associates in Al Qaeda, have launched an insurgency against NATO forces in Helmand province, where the US with its continuing desire to wage its War on Drugs is at the forefront of the eradication program, mainly through aerial spraying of the poppy crop. This has provided the Taliban a golden opportunity to recruit angry poppy farmers. Its “hearts and minds program is to offer protection to farmers’ opium crops from government eradicators, for a 10% ‘tax’, which is usually paid willingly”.¹¹

¹⁰ Holloway (2006).

¹¹ Meo (2008).

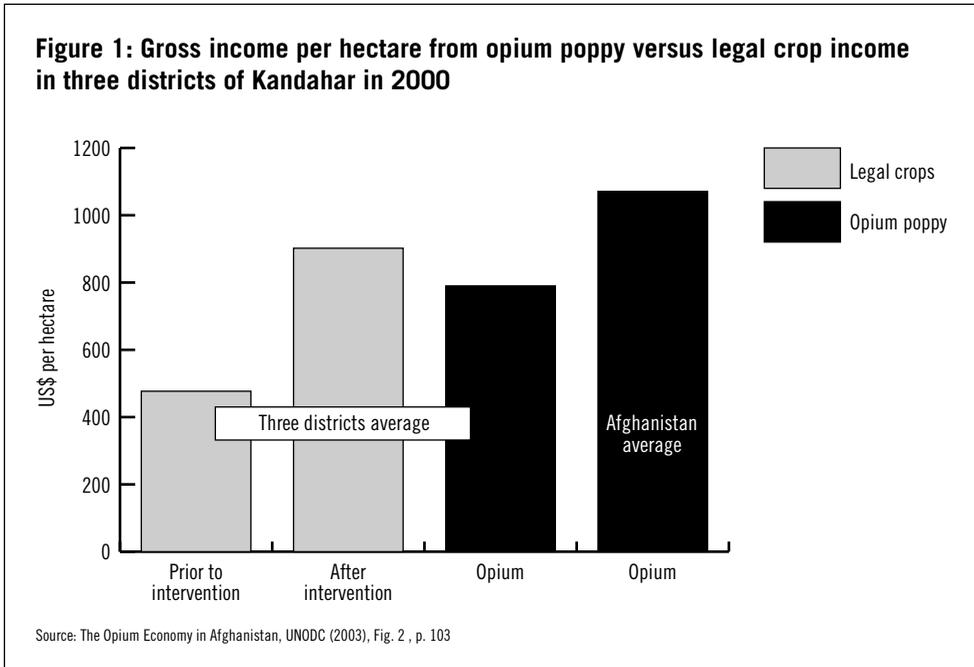
2. The 'Alternative Livelihoods Program'

The “alternative livelihoods” program promoted by the UK Dept. for International Development has failed to persuade farmers to switch from poppies to other crops.¹²

This is unsurprising. An evaluation by UNODC of its Alternative Development Project between 1997 and 2000 in 3 districts of Kandahar province in southern Afghanistan found that, though the program succeeded in raising the yields of legal crops (like wheat, cumin, beans, onions and fruits) by about 90%, “the data show that for Afghanistan as a whole the improvements reported from the three districts would not have been sufficient to make legal crops more profitable than opium poppy (Figure 1). The national average gross income from opium poppy was \$1,071 in 2000, thus still above the gross income from legal crops in the three target districts of Kandahar province (\$902)”. These lower returns were due to the relatively low profitability of the main legal crops (wheat as a winter, maize as a summer crop) compared to opium poppy (combined with maize), and depended directly upon their price relative to that of opium. When the Taliban enforced the production ban in 2000 there was a massive rise in opium prices, with the average gross income per hectare from poppy cultivation (despite the fall in yields because of a drought and the prohibition on cultivation which effected the irrigated land in southern and eastern provinces) rising seven-fold “from about \$1,100 in 2000 to \$7,400 in 2001”. By 2002, after the fall of the Taliban, income per hectare from opium poppy rose further to an average of \$16,100. As the UNODC report on *The Opium Economy in Afghanistan* ruefully concluded, “at these gross income levels no other crop which could be planted on a large scale would be competitive vis à vis opium poppy in Afghanistan...Alternative development efforts alone, though important for Afghanistan’s medium and long-term future, cannot provide sufficiently strong incentives to farmers to give up planting poppy. Profitability of opium poppy is simply too high, at least for the time being”.¹³

¹² Phelps and Castillo (2008) have suggested channeling reconstruction aid through the central government to provide price support for legal crops (e.g. cotton), and once the output of lawful crops increases to provide the necessary technical knowhow and credit for the local industrialization of these crops. But as I noted in my letter in response, “War on terror cannot be won through the war on drugs”, *Financial Times*, 8 January 2008, this would only work if there was a viable Afghan polity, which could only be established if the Taliban insurgency could be defeated. The simplest means being the measures suggested later in this article.

¹³ UNODC (2003), *The Opium Economy in Afghanistan*, p. 105.



The UNODC's desired solution in this context seems quixotic. It argues that given these high profits, poppy production can only be achieved by "(a) a rigorous implementation of the ban on opium poppy cultivation across the country and (b) the creation of a security belt around Afghanistan, in close co-operation with the Afghan authorities, in order to reduce the outflows of opiates from Afghanistan, thus lowering the demand for opiates within the country".¹⁴ The first condition, as the experience from the 2000 Taliban ban shows, will merely increase the price of opium, further raising the profitability of the opium poppy. The second requires an incorruptible effective central government, whose creation is threatened by a Taliban insurgency which would only be aided by a rigorous enforcement of the opium ban.

For, as the UK troops currently battling the Taliban in southern Afghanistan have realized, protecting the farmers' opium crop from government eradicators is the Taliban's most potent recruiting instrument to their cause. Besides providing them—through the 10% tax they charge for

¹⁴ Op. cit.

this protection—the funding for their weapons, ammunitions and fighters, the drugs lords controlling the drugs trade “don’t want the Afghan government authority that, in theory at least, comes in the Army’s wake. For all the counter-narcotics efforts in Kabul and the stern words in Whitehall about tackling drugs, British soldiers understand the drugs problem very well. This spring [2008] as eradication teams made ready in Kandahar, the British were broadcasting radio adverts promising not to destroy opium around Musa Qala. Not this year, at least”.¹⁵

3. Alternative policies

If the War of Terror in its current epicenter in southern Afghanistan is to be won, this *laissez-faire* policy towards poppy cultivation needs to be made permanent. To deny the Taliban and the drugs lords the profits from the drugs trade which is financing the insurgency, a rational unsentimental response would be for NATO’s development agencies to use the money they are currently spending on their failed economic development efforts in Afghanistan, as well as that on poppy eradication, to *purchase* the opium poppy crop directly from the farmers, in competition with the Taliban and drug lords. The farmers could be required to put the 10% tax on income from poppy cultivation they currently pay the Taliban into development funds located and managed by locals to refurbish the destroyed agricultural infrastructure, which in time might be able to raise the productivity of alternative crops sufficiently to allow farmers to switch to non-poppy crops.

The opium purchased directly from the farmers could be used by the Western development agencies to provide morphine for easing the pain associated with various terminal illnesses including AIDS in many parts of the Third World, especially in sub-Saharan Africa.¹⁶ Any surplus of opium

¹⁵ Meo (2008).

¹⁶ D. G. McNeill Jr. (2007) notes that “the World Health Organization reports that 4.8 million people a year with moderate to severe cancer pain receive no appropriate treatment. Nor do another 1.4 million with late stage AIDS. For other causes of lingering pain it issues no estimates but believes that millions go untreated”. The vast majority of these are in developing countries. Thus McNeill cites a report from the UN’s International Narcotics Control Board, that “Six countries—the US, Canada, France, Germany, the UK and Australia—consumed 79 per cent of the world’s morphine according to a 2005 estimate. The poor- and middle-income countries where 80 per cent of the world’s people live consumed only about 6 per cent”. Morphine is inexpensive: “One hospice in Uganda, for example, mixes its own liquid morphine so cheaply that a three week supply costs less than a loaf of bread. It is not used because of the fear of addiction. As David Joranson, of the University of Wisconsin medical school [has said] ‘pain relief hasn’t been given as much attention as the war on drugs’”.

remaining could be stored for future use for both medicinal purposes and to control the markets for opiates.

But such rational solutions to defeating the Taliban, by accepting the opium economy in Afghanistan and using it to win rather than endanger the War on Terror, can only be achieved if the US and UK give up their decades old War on Drugs. Apart from having being unsuccessful in achieving its avowed aims (see the next section), it has through its supply control measures created a large global illegal economy where trafficking in illegal goods from drugs to arms to humans, has also led to a vast shadow global money laundering financial system, and to the creation of narco-states, as in the coca growing countries of the Andes.¹⁷ The drug wars and the accompanying corruption to garner the massive illegal profits in this illicit trade are now reaching the very borders of the US as Mexico's democracy is being gradually undermined. We, therefore, turn to the War on Drugs and see if in theory and practice its benefits are likely to exceed its costs—which must include the cost of endangering the geo-politically more important War on Terror.

II THE WAR ON DRUGS

1. History

The international War on Drugs goes back to the Shanghai Opium Commission of 1909 and the first international drug treaty of the International Opium Convention of The Hague in 1912. The US has since been at the spearhead of the international attempts to control drugs. It is instructive to see how this came about, and why it might be difficult for the US to call a halt on its War on Drugs despite its endangering its more important War on Terror.

The British empire, which preceded the current American imperium,¹⁸ had not merely tolerated but promoted the opium trade with China from its Indian base, as a means to balance its large incipient trade imbalance with the Chinese. By the beginning of the 19th century, India was the

¹⁷ See Naim (2007).

¹⁸ See Lal (2004).

largest opium producer in the world with the bulk being exported to South East Asia and China. The state monopoly of opium production and distribution, established by Akbar the Great in the 16th century, was resurrected by the British East India Company after it took control of the opium producing regions of Bengal and Bihar with the victory at the battle of Plassey in 1757. The revenues from the opium trade financed the company's subsequent military expenditures in conquering the rest of the sub continent.¹⁹

With the establishment of the British Raj after the 1857 Mutiny, the opium trade continued to provide substantial revenues for the continually fiscally constrained imperial power. In 1880 opium related income provided 14% of the annual income of the Raj.²⁰ It was to protect these interests that the British fought the Opium Wars in China in the 19th century, to keep their major opium consuming market open, in the face of the successive attempts by Chinese emperors to crack down on opium imports to control the growing opium addiction in China. After the Second Opium War in 1856, the Chinese were forced to legalize the importation of opium by the treaty of Tientsin in 1858. Subsequently the Chinese gradually removed restrictions on domestic production, and by 1906 China was producing more than 35,000 mt of opium²¹ (to be contrasted with the 9,000mt of opium produced in Afghanistan in 2007), to meet the demand from 23.3% of the male and 3.5% of the female adult population of China in 1906, who were consuming between 85%–95% of global opium supply at the beginning of the 20th century.²²

It was this Chinese opium crisis which led to the movement for international supply control measures fuelled by the perceived immorality of the opium trade. This consisted of the usual suspects. It included “conservative religious groups, Chinese nationalists, and left wing critics of the impact of unfettered capitalism, the Victorian predecessors of today's anti-globalization lobby”.²³ In response to their demands for abolition of the opium trade and its prohibition in British India, the British government set up a Royal Commission on Opium in 1893. Its Report of 1895 was

¹⁹ Kapoor (1997), p. 11; Trocki (1999), p. 37.

²⁰ UNODC (2008), *World Drug Report 2008*, p. 176.

²¹ Zhou (1999), p. 13.

²² UNODC (2008), *World Drug Report 2008*, p. 177.

²³ *Ibid.*

based on rigorously collected information from a broad range of witnesses including doctors, the police, the military, local governments, lawyers, journalists, landowners, planters, merchants and missionaries. Its conclusions—apart from the obvious one that the loss of revenue and costs of enforcing prohibition could not be borne by India’s precarious finances—were that the prohibition of opium except for medical purposes was neither necessary nor wanted by Indians, and so the government should maintain a *laissez-faire* policy to its production and consumption. But, most importantly, that opium consumption did not cause “extensive moral or physical degradation”, whilst it was impractical to disentangle the medical from non-medical consumption of opium.²⁴

These reasoned conclusions were, of course, in accord with the classical liberal policies—whose most eloquent votary was John Stuart Mill—which informed public policy in Britain in the 19th century. Mill had explicitly attacked the temperance movement’s demand to prohibit the consumption of alcohol as being in breach of his basic principle of liberty, which prohibited social control of individual’s personal tastes and behavior on moral grounds. As he stated: “the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant”.²⁵

When, in its first imperial venture, the US occupied the Philippines in 1898, the large domestic demand from opium consumers was met by state controlled monopolies, which provided a large part of the revenues of the preceding Spanish colonial state. The US initially sought to maintain a licensed opium trade and legal consumption. This plan was derailed by a powerful missionary prohibitionist lobby—the International Reform Lobby—at the instigation of its missionaries in the Philippines. Appalled at the US sanctioning the opium evil, it bombarded President Theodore Roosevelt with petitions from its supporters. Roosevelt caved in, and thus began the long and continuing US War on Drugs.

²⁴ Richards (2001).

²⁵ Mill (1859/1910), pp. 72–3.

2. Social Ethics: J. S. Mill on Prohibition

Mill had foreseen the influence of the US's moralists in derailing his principle of liberty.

He discussed at length the temperance movement and its offshoots in Britain and its doctrine of 'social rights' which claimed a citizen's "right to legislate whenever my social rights are invaded by the social acts of another. If anything invades my social rights, certainly the traffic in strong drink does. It destroys my primary right of security, by constantly creating and stimulating social disorder. It invades my right of equality, by deriving a profit from the creation of a misery I am taxed to support. It impedes my right to free moral and intellectual development, by surrounding my path with dangers, and by weakening and demoralizing society, from which I have a right to claim mutual aid and intercourse".²⁶ This "monstrous principle", Mill goes on to say, "is far more dangerous than any single interference with liberty; there is no violation of liberty which it would not justify". This doctrine of 'social rights' seeking to justify prohibitions of actions in the private domain "ascribes to all mankind a vested interest in each other's moral, intellectual and even physical perfection, to be defined by each claimant according to his own standard".

Mill also deals with the other effects of alcohol and 'poison' which are claimed to harm others, what in modern parlance would be called negative externalities from the consumption of drugs. He deals with those still being paraded to justify prohibition: crime and social disorder. These purported 'externalities' Mill argues, merely require the usual punishment once the crime is committed, and though "drunkenness...is not a fit subject for legislative interference...it [is] perfectly legitimate that a person, who had once been convicted of any act of violence under the influence of drink, should be placed under a special legal restriction, personal to himself; that if he were afterwards found drunk, he should be liable to a penalty, and if in that state he committed another offence, the punishment to which he would be liable for that other offence should be increased in severity".

Mill thus argued against any negative externalities flowing from the consumption of addictive substances which are claimed to require prohibition by the state. He provided cogent arguments which still have

²⁶ Mill (1859/1910), pp. 145–6.

resonance against what he called the “liberticide” of “the projects of social reformers”.

But, there remains one other adduced externality arising from Socialized medicine—which did not exist in Mill’s day. It has been claimed that society has an interest in preventing addiction as it has to bear the costs of treating the medical consequences of addiction. But, Mill explicitly states, that there can be no general argument against taxing addictive products for fiscal reasons (though not prohibitively as that would amount to illegitimate prohibition). Thus, the revenues derived from these legitimate ‘sin taxes’ can be used to cover the medical expenses of addiction. In fact a large part of the expenditures of the National Health Service are covered by the swingeing taxes on tobacco in the UK. If drugs were legalized and taxed like tobacco, the resulting revenues could be used to treat addicts. No ‘medical’ externality need arise.

3. The Divided Self and Rational Addiction

But, even where none of these externalities is adduced, it is nevertheless claimed that Mill’s principle of liberty would ensure prohibition. Because, the drug addict or alcoholic would, in the rational “long run” part of a postulated divided self, demand the freedom of a non-addictive life which his “short run” myopic addicted self would prevent. Hence, basing themselves on Mill’s correct argument against a person’s freedom to sell himself into slavery,²⁷ it has been argued (e.g. by Amartya Sen about smoking tobacco—another addictive substance) that prohibition is justified on Mill’s principles of liberty “as habit forming behaviour today restricts the freedom of the same person in the future”.²⁸ But as I and others pointed out subsequently, this is a complete misuse of Mill’s argument against slavery.²⁹

²⁷ namely that “the principle of freedom cannot require that the person be free not to be free. It is not freedom to be allowed to alienate his freedom”—Mill (1859/1910), p. 158.

²⁸ Sen (2007).

²⁹ See D. Lal, “Mill would have been appalled at tax on risky, pleasurable activities”, Letters, *Financial Times*, 15 February 2007. The best response to Sen’s article was from Stuart Simpson, who as a heavy smoker since his teens wrote that “So strong is Prof. Sen’s commitment to liberty that he feels we must now go beyond the traditional assumption of individual free will and seek to liberate the individual from himself or herself. I have myself been in a state of bondage for over 15 years and I was entirely unaware of this state until two weeks ago. This has left me feeling uneasy. Perhaps Prof. Sen can be given a regular column to enlighten us to other states of bondage we may find ourselves in. Each week he may identify for us a personal behaviour from which we require to be liberated with the aid of state sanctions. In time the government may be persuaded to set up a new ministry to deal with the required legislation. I suggest we call this ministry the Ministry of Liberty”. (“Liberate us from all our states of bondage”, Letters, *Financial Times*, 2 March 2007).

Mill's robust defense against bans on addictive substances like alcohol and opium, does not mention his argument against slavery as being relevant in any way.

The argument for prohibiting addictive substances, based on assuming a divided self, postulates a negative inter-temporal consumption externality facing potential addicts. In the resulting myopic models³⁰ the current consumption of addictive substances depends on the 'stock of habits' which is given by the depreciated sum of all past consumption.³¹ Hence, current consumption depends on past consumption but not future consumption. This omission is repaired in the rational addiction models of Becker and Murphy. They show how even with inter-temporally inconsistent preferences, consumers maximize utility over their lifecycle taking account of the future consequences of their actions in consuming addictive substances.³²

These models capture many of the well known features of addiction. Due to reinforcement, consumption in adjacent time periods are complements. So that current consumption of the good is related not only to the current price but to all past and (expected) future prices. The long-run effect of a permanent price change will exceed that in the short run, as will that of an anticipated price change from one which is unanticipated. These models also lead to bimodal distributions of consumption, echoing the 'binge' and 'cold turkey' type behaviour found amongst addicts. Also the models imply that temporary events like a price cut, peer pressure, stress etc. can lead to permanent addiction. Finally, the responsiveness to price changes also depends upon the individual's rate of time preference—the rate at which he/she discounts the future. The rational addiction model thus seems to capture all the features which supposedly make addictive substances like drugs and tobacco different from other consumption goods, and yet show that addiction could be perfectly rational. No divided self needs to be postulated.

Prohibition of these addictive substances, therefore, entails the same losses of economic welfare in terms of consumer surplus lost, as would occur if consumption of other goods were prohibited. In a study I and my research students at UCLA made of the welfare losses entailed by raising the tax on tobacco by 10%, within a rigorous cost–benefit framework,

³⁰ See Schelling (1978).

³¹ See Houthakker and Taylor (1966).

³² See Becker and Murphy (1988); Becker et al. (1994).

using estimates of the demand curves from the rational addiction model for India, Korea, South Africa, Japan and the European Union, it was found that these losses were large.³³

The arguments against prohibition of addictive substances, therefore, remain cogent. The assumption that their consumption entails a consumption externality is insecure. But, even assuming that there *is* an externality, would it justify restricting supply, particularly through banning the international trade in drugs? For it is these supply control measures which are at the heart of the problems faced by the War on Terror in Afghanistan, and it is to the relevant economic theory that I now turn.

4. Theory: Welfare Economics

The modern theory of trade and welfare offers a clear argument against prohibiting free trade in drugs. The presumed negative externality from consuming drugs is (in this theory) a ‘domestic distortion’ in consumption, which requires remedial domestic measures, but no interference in international trade. The domestic remedial action could range from a large tax to equalize the marginal social with the marginal private value of consumption to prohibition. For, this consumption tax could be prohibitive. But, free international trade to supply whatever demand remains would be welfare maximizing. The supply in a free trading world would be provided by the country which had a comparative advantage in its production, and this would (given appropriate measures to deal with the local domestic distortion in consumption) maximize world economic welfare.³⁴ There would be no case for prohibiting the Afghans from growing opium and exporting it, if they have a comparative advantage in its production—as they seem to have from our discussion in the previous section.

What about the welfare maximizing domestic policy for dealing with the purported negative consumption externality in the drug consuming country? This question has recently been definitively answered by Becker, Murphy and Grossman within the standard cost–benefit framework, considering both the positive and normative effects of punishments seeking to make production and consumption of drugs illegal.³⁵ They

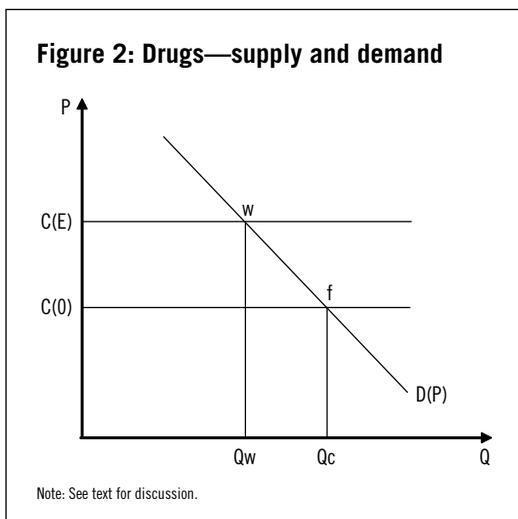
³³ Lal, Kim, Lu and Prat (2003). Also see Lal (2000).

³⁴ See Krueger and Aturupane (1998).

³⁵ Becker, Murphy and Grossman (2004).

assume that the social value is negative, whilst the private value from consuming drugs is positive, given by private willingness to pay. They compare the effects of prohibition (optimally enforced) with those of legalizing drugs and levying a tax on their consumption.

Assume drugs are supplied by a competitive drug industry with constant costs, in Figure 2. If the demand curve for drugs is given by $D(P)$, the cost curve for drugs in a free market is $C(0)$ and consumption is Q_c , the free market equilibrium will be at 'f'. If the government launches a "War on Drugs" and spends resources E on interdiction of drug suppliers and smugglers, the costs of supplying drugs will be $C(E)$. Adding the costs to consumers of criminal punishments and other inconveniences in obtaining illegal drugs of T , the price to consumers will be $P = C(E) + T$. Assuming



that the major thrust of the war on drugs is to control supply so that $T = 0$, the war on drugs equilibrium would be at 'w', with the resources devoted to drug production, smuggling and distribution being exactly equal to the revenues from drug sales in both the free and illegal equilibrium (the area under the demand curve at f and w). If the demand for drugs is price-inelastic, the more vigorously the war on drugs is pursued, ($>E$, and hence higher $C(E)$), the greater will be the total resources devoted to supplying drugs, with only a small fall in consumption.

Being illegal, data on price and quantity consumed are scarce, so that there are few reliable estimates of the price-elasticity of demand for drugs. The few available estimates give an absolute value of less than one.³⁶

³⁶ Caulkins (1995), van Ours (1995). Only a few studies have attempted to use the rational addiction model to estimate the demand for cocaine by young adults, surveyed in Grossman and Chaloupka (1998). These models imply that the long-run price elasticity of demand exceeds the short-run one. Grossman and Chaloupka emphasise an "estimate of the long run price elasticity of total consumption (participation multiplied by frequency given participation) of -1.35 . When, however, they include individual fixed effects to control for unmeasured area-specific effects that may be correlated with price and consumption, the elasticity becomes -0.67 . One problem with the latter estimate is that biases due to random measurement error in the price of cocaine are exacerbated in the fixed-effects specification"—Becker, Murphy and Grossman (2004), n. 2, p. 15.

As Becker, Murphy and Grossman conclude, “Since considerable resources are spent fighting the war and reducing consumption, the drug war can only be considered socially optimal with a long-run demand elasticity of about $-1/2$ if the negative social externality of drug use is more than twice the positive value to drug users”.³⁷

A policy of prohibition and supply controls with optimal enforcement can be compared with legalizing drugs and taxing them optimally at a rate which equals the difference between the marginal private and marginal social value of consuming drugs. Becker et al. show that this optimal excise tax would be higher than the implicit ‘tax’ that consumers face with prohibition and optimal enforcement. The resulting higher price with taxation of legalized drugs could thus reduce drug consumption by more than an efficient war on drugs. But, as with all ‘sin’ taxes, high taxes would also foster the black market (as with prohibition), necessitating continued spending on enforcement. Becker et al. argue that the ‘sin’ tax on drugs needs to be accompanied with an optimal level of punishment for black market activities which ideally would eliminate the black market. But, given the diminishing returns from increased punishment, there would be an optimal combination of tax and punishments, which would be less than the ideal, and hence a second best outcome would be the best policy, where the divergence between the private and marginal social value of drug consumption would not be completely eliminated.

This then leads to a more radical alternative, in the spirit of J. S. Mill, to have a free market in drugs.³⁸ This would eliminate the costs associated with prohibition, including crime. But with lower prices and the elimination of legal threats to their use, drug consumption could increase. There are other more nebulous countervailing forces which might not lead to an increase. Many current abstainers would not become consumers as they consider drugs to be dangerous or repugnant (as with alcohol and tobacco). Those currently refraining because of legal threats would probably use the drugs responsibly for fear of other legal threats as with alcohol (driving under the influence), losing their job or reputation. Also, with legalization, the consumption amongst the young, experimenting with illegal drugs

³⁷ Becker, Murphy and Grossman (2004), p. 15.

³⁸ See Thornton and Bowmaker (2008) for a lucid and succinct discussion of the case for a free market for drugs against that for other forms of legalization—government monopoly, government regulation, sin taxes—and prohibition.

because of their ‘forbidden fruit’ aspect, could fall. As we have no statistical estimates for these different factors, we cannot determine the increase in consumption of drugs with their legalization. But as with other addictive substances (like alcohol and tobacco) it is not likely to be disastrous. For, the rules of the game which govern all markets, including those governing private property, tort, and contracts, as well as the customs and traditions of society which control private behaviour, would make the market for drugs look very different from that with prohibition. “With legalization, market behaviour will look more like Budweiser, Marlboro and Coca-Cola, and less like Al Capone, *Miami Vice*, and *The Sopranos*”.³⁹ But, as Mill explicitly noted, even with legalization there could be a case for taxing drugs which face an inelastic demand curve for fiscal reasons, as part of an optimal tax system to raise revenue.

Thus the theoretical welfare economics conclusions, even assuming that there is a negative social externality in consuming drugs are: *first*, this does not provide a justification for the restriction of their production in other countries, as the US is seeking to do about opium poppy cultivation in Afghanistan. The theory of trade and welfare establishes that where there are externalities in consumption (and not in production) production should occur in the countries with a comparative advantage in producing the good. Imports should be taxed at the same rate as that paid by domestic consumers. If domestic consumption is taxed to equate the marginal private with the marginal social value of the good, the same tax rate should be charged on imports. But domestic production like foreign production should not be taxed, so that the marginal rate of transformation between goods produced is the same wherever they are produced. This could imply that if the consumption tax is sufficiently high (prohibitive), there would be no domestic consumption of the good, even though if the country had a comparative advantage in its production it should freely produce and export the good. This in effect was the policy the Taliban followed for most of the period it was in power in Afghanistan!

Second, even with a negative externality in the consumption of drugs, the optimal policy if the demand is price inelastic (as it seems to be) is not prohibition, but optimal taxation of consumption of legalized drugs. This

³⁹ Thornton and Bowmaker (2008), p. 72.

optimal tax being higher than the implicit 'tax' with prohibition could also lead to lower consumption than with the war on drugs.

Third, as this 'sin tax' would still create black markets, requiring punishments to be enforced for their control, the optimal 'sin' tax cum enforcement equilibrium would still leave a divergence between the marginal social and private value of consuming drugs. This leads to the most radical alternative, namely a free market, where any spillovers are regulated, as in other markets, by the law and custom. As with so many other purported 'domestic distortions' in the working of the price mechanism, the prescribed cures may be worse than the disease, so that *laissez-faire* is the best policy from the viewpoint of economic welfare.⁴⁰

5. Outcomes

Finally, we can briefly outline the outcomes of the continuing War on Drugs.

Its effects on endangering the War on Terror in Afghanistan have been outlined in the first section. This US led war has led in the Andes to a succession of states which are or in danger of becoming narco-states. Colombia is the primary example, but with Bolivia and Ecuador not far behind. The Shining Path movement in Peru was supported by the Indian population incensed by the destruction of their coca crops. As I write, the head of the Mexican intelligence service is reported to have said: "Drug traffickers have become the principal threat" to the country's democratic institutions "because they are trying to take the power of the state". The gangs which have become wealthy from the multi-billion dollar drug trade have "co-opted many members of local police forces, judiciaries and government entities in their efforts to create local structures to protect their business...Congress is not exempt...we do not rule out the possibility that drug money is involved in the campaigns [of some legislators]".⁴¹ The US's foreign policy goals are continually being undermined by its War on Drugs.

Equally sinister are the illicit markets in money laundering, illegal weapons and human trafficking that the necessarily imperfect attempts to

⁴⁰ For a theoretical justification of this position in the context of the theory of trade and welfare, see Lal (2003); Lal (2006).

⁴¹ Adam Thompson, "Democracy in Mexico under 'threat' from drug cartels", *Financial Times*, July 14, 2008, p. 7.

control foreign supply in the face of stubborn domestic demand for drugs in the US have spawned, generating huge profits for drug barons and smugglers.⁴² Table 1 shows the estimates from various official sources of the extent of international money laundering which has been estimated to be between 2%–6% of world GDP. Table 2 shows UNODC’s estimate of the total value of the global illicit drug market in 2003. In terms of retail value it was \$322 billion, just over 4% of global licit exports. Table 3 provides data on opium production, and prices in the main opium exporting and consuming countries of the world. It shows that in Afghanistan, the major opium producing country today, and the cockpit of the current War

Table 1: Estimates of international money laundering

Source	Magnitude	World GDP (IMF 2008)	Share of money laundering
UNODC	\$800 billion–\$2 trillion per year	\$60.1 trillion	1–3% of World GDP
US Department of State (2008)	\$2.17 trillion–\$3.61 trillion per year	\$60.1 trillion	4–6% of World GDP
US Department of State (1998)	\$300 billion–\$500 billion per year	\$29.9 trillion	1–2% of World GDP
International Monetary Fund	\$1.80 trillion–\$3.01 trillion	\$60.1 trillion	3–5% of World GDP

Sources:

(1) United Nations Office on Drugs and Crime (UNODC), <http://www.unodc.org/unodc/en/money-laundering/globalization.html>

(2) United States Department of State, Bureau for International Narcotics and Law Enforcement Affairs, *International Narcotics Control Strategy Report, Volume 2*, March 2008 (p. 5)

(3) International Monetary Fund, World Economic Outlook Database, April 2008

Table 2: Estimated total value of the global illicit drug market (2003) (in billions)

Global illicit drug market	UNODC’s estimated value	Estimated value in per cent of global licit exports	Estimated value in per cent of global GDP
at the production level	\$13	0.17	0.04
at the wholesale level	\$94	1.25	0.26
at the retail level	\$322	4.29	0.90
	Value		
Global licit exports	\$7,503		
Global GDP	\$35,765		

Source: United Nations Office on Drugs and Crime (UNODC), *World Drug Report 2005* (p. 127)

Note: UNODC cites the World Trade Organisation, *International Trade Statistics 2004* (p. 19) for the global licit exports data and World Bank, *World Development Indicators 2005 Report* for the global GDP data.

⁴² See Naim (2007) for a chilling account of these often linked illegal and increasingly globalized markets, which are becoming a serious threat to global order.

Table 3: Price of opium (2006)

	Afghanistan	Myanmar	Lao PDR	USA	Europe (b)	UK
Average farm-gate price of opium at harvest time (US\$/kg)	\$125	\$230	\$550			
Total potential farm-gate value of opium production (US\$)	\$760,000,000	\$72,000,000	\$11,000,000			
Wholesale price of opiates (US\$/kg) ^(a)				\$65,000	\$31,027	\$27,920
Retail price of opiates (US\$/kg) ^(a)				\$195,000	\$71,000	\$97,000
Wholesale price of opium (US\$/kg) ^(c,d)	\$155	\$240	\$218	\$31,500		\$8,233
Retail price of opium (US\$/kg) ^(c,d)	\$100	\$700		\$34,000		\$27,400
Wholesale price of heroin (US\$/kg) ^(c,e)	\$3,017		\$12,000	\$65,000		\$39,623
Retail price of heroin (US\$/kg) ^(c,e)	\$3,000	\$56,200		\$207,500		\$101,900
Gross trafficking profits to Afghan traffickers	\$2,340,000,000					

Source: United Nations Office on Drugs and Crime (UNODC), *World Drug Report 2007* (pp.195, 209, 212, 223–227)

(a) Figures for USA are for 2005.

(b) Weighted average of 18 European countries.

(c) Figures are typical prices.

(d) Figures are for 2005 except USA; figures for USA are for 2004.

(e) Figures are for 2005 except Lao PDR; figure for Lao PDR is for 2004.

on Terror, the gross trafficking profits of Afghan traffickers are estimated to be over \$2.3 billion in 2006, which were nearly 33% of the country's GDP. In terms of the size of the global illicit drugs market, the significant avenues for money laundering, and the massive profits that Afghan drug traffickers (and through them the Taliban) can obtain as a result of the War on Drugs, and the impossibility of weaning Afghan farmers from opium cultivation in the short- to medium term, provides enough evidence that the US War on Terror is now seriously threatened by its War on Drugs.

Even given its avowed aims, the War on Drugs has been ineffectual.⁴³ Its aim is to reduce drug use (particularly amongst the young) and thereby its consequences—overdoses, lost production and HIV infections. 16 million Americans, 7 per cent of the population over age 12 use illegal drugs which is a \$60 billion per year industry in the US. This overall demand for drugs is made up of a smaller proportion of the population who have an addiction problem. As Peter Reuter summarizes the evidence, “the American drug problem is narrow and static. No more than two and a half million Americans have substantial problems with cocaine and/or heroin—less than one-fifth the number for alcohol. Those with problems are heavily concentrated in urban minority communities. Methamphetamine abuse remains a much smaller problem, while marijuana dependence, a real phenomenon involving many more people, has much less consequence for those who experience it”.⁴⁴ As for preventing teenagers being initiated into drugs, official figures show “initiation of marijuana, cocaine, and hallucinogens went up in the 1990s and has stayed there”.⁴⁵

Table 4 gives the total expenditure by the US federal government on drug control and its composition. It has risen from about \$12 billion in 2002 to \$14 billion in 2008. In addition states and localities spend at least as much.⁴⁶ So the total government spending on controlling illicit drugs is about \$30 billion annually. The bulk of the increase in federal expenditure has been on measures to reduce supply, spending on them having doubled, over the period, as compared with those to reduce demand. This emphasis on controlling supply should have been expected to raise the price of drugs,⁴⁷

⁴³ See MacCoun and Reuter (2001); Miron and Zweibel (1995); Miron (2004).

⁴⁴ Reuter (2001), p. 16.

⁴⁵ Caulkins et al. (2005), p. 5. This report by RAND presents a succinct summary of the research on the US “War on Drugs”.

⁴⁶ Reuter (2001), p. 16.

⁴⁷ Caulkins et al. (2005), p. 7.

Table 4: Historical federal drug control funding by function in the US, FY2002–FY2009 (budget authority in millions)

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
	Final	Final	Final	Final	Final	Final	Enacted	Request
Total demand reduction	\$4,916	\$4,949	\$5,123	\$5,144	\$4,948	\$4,903	\$4,983	\$4,910
Total supply reduction	\$5,865	\$6,271	\$6,883	\$7,640	\$8,196	\$8,941	\$8,673	\$9,205
Total	\$10,781	\$11,220	\$12,006	\$12,784	\$13,144	\$13,844	\$13,655	\$14,114

Source: The White House, *National Drug Control Strategy FY2009 Budget Summary* (p. 13)

and thus reduce consumption. But “the overall trend in cocaine and heroin retail prices during the past two decades has been downward (after adjusting for potency). That suggests *greater* availability of drugs on the streets in the United States not less”. Thus “the price record suggests that supply control efforts have failed to reduce the use of any established drug”.

But, nevertheless, there has been no increase in cocaine or heroin use. This reflects a pattern of drug use which is characterized by the time shape of a contagious epidemic. Drug use is spread mainly through social contacts, but most users after becoming aware of the downside of drug addiction desist from use. The epidemic pattern is found for different drugs in many countries, each with its own drug control policies, so other factors seem to be at work than government policies. “The increases in drug use at the ‘outbreak’ of an epidemic are also far faster than corresponding changes in underlying social variables (e.g. unemployment). The likely cause is that, while the epidemic is in outbreak mode, large numbers of light users are recruiting even larger numbers of lighter users. With the passage of time and the progression of consumers to heavy use, adverse effects become more apparent and the sheen begins to wear off the drug. Light use, with its risk of addiction and ill effects, no longer seems so attractive, and that dilutes the recruiting power of light users. Furthermore, as social circles amenable to drug use become exhausted of nonusers, the number of prospects left to recruit shrinks. Use of the drug begins to ebb, sometimes down to levels prior to the epidemic, sometimes stabilizing at endemic levels. This cycle can take a long time, as heavy use careers can last many years. Hence, there remains a large number of

people who continue to experience the problems of the affliction, even while there are few new cases”.⁴⁸

Thus the cocaine and heroin epidemics seem to have run their course, with few new heroin addicts since the early 1970s, and cocaine addicts since the 1980s. “The addict population is getting older and sicker, though it is still criminally very active; the average age of heroin addicts is now about 45. With early deaths and increasing incarceration, the number of active cocaine and heroin addicts is very slowly declining”.⁴⁹

The proportion of chronic drug users in the world population is small (Table 5) as is that of opiate users in the major consuming areas (Table 6). There is some evidence that there is a genetic element in creating a propensity to use drugs in a small proportion of the population, which can

Table 5: Illegal drug use at the global level (2005/2006), age 15–64 (millions of people)

	Number of people	Percent
World population age 15–64	4,177	100
Non-drug using population	3,977	95
Annual prevalence of drug use	200	5
Monthly prevalence of drug use	110	3
Problem drug use	25	1

Source: United Nations Office on Drugs and Crime (UNODC), *World Drug Report 2007* (p. 30)

Table 6: Annual prevalence of opiates abuse (2005)

	Abuse of opiates...		...of which abuse of heroin	
	Population	% of population 15–64 years	Population	% of population 15–64 years
Europe	3,860,000	0.7	3,250,000	0.6
Americas	2,130,000	0.4	1,480,000	0.3
Asia	8,480,000	0.3	5,350,000	0.2
Oceania	90,000	0.4	30,000	0.1
Africa	980,000	0.2	980,000	0.2
Global	15,550,000	0.4	11,090,000	0.3

Source: United Nations Office on Drugs and Crime (UNODC), *World Drug Report 2007* (p. 56)

⁴⁸ Caulkins et al. (2005), pp. 11–12.

⁴⁹ Reuter (2001), p. 16.

be activated by various environmental factors.⁵⁰ Peter Whybrow, the head of UCLA's Neuropsychiatric Institute reports that a novelty seeking and risk-taking gene which is to be found in migrants is also found in those with a predisposition towards addictive behaviour which often descends into manic-depression (bipolarity).⁵¹ But this gene is rare, being at the tail of the normal distribution. Hence the small proportion of addicts in a population.

But, given this probable genetic basis for addiction, treatment not prohibition would seem to be the correct response to the drug problem. It has been estimated that “drug treatment reduces drug use by 40% to 60% and significantly decreases criminal activity during and after treatment”.⁵² But because of the high rates of post treatment relapse and need to get addicts into treatment a number of times to take advantage of the in-treatment reduction in their drug use, it may be necessary to combine treatment with some form of coercion to keep them in treatment programs. Treatment is more cost effective than enforcement of prohibitions.⁵³

One other unintended consequence of the supply side emphasis in the War on Drugs is that with nearly 3/4 of the money to combat drug use being spent on apprehending and punishing drug dealers and abusers, “the imprisonment rate in the US for drug offenses alone is much higher than the rates of most Western European nations for all crimes. For example, France imprisoned 95 per 100,000 in the population in 1995; that same year, the United States imprisoned 149 per 100,000 for drugs alone”.⁵⁴ Most of these are poor and Afro-American.⁵⁵

Finally, even if supply side control measures are used to limit drug use, the estimates made by RAND researchers of the relative cost-effectiveness of alternative enforcement strategies to avert cocaine consumption per million dollars spent (Figure 3) show that source country control is the worst option. As the RAND survey of the research on US drug problems

⁵⁰ Vanyukov and Tarter (2000).

⁵¹ Whybrow (2005), and Lal (2006) pp. 3–4. The novelty seeking, risk taking ‘migrant’ gene of our ancestors who walked from our homeland in Africa to the four corners of the earth has been confirmed by the work of Cavalli-Sforza (2000), Chen et al. (1999), and Chang et al. (1996).

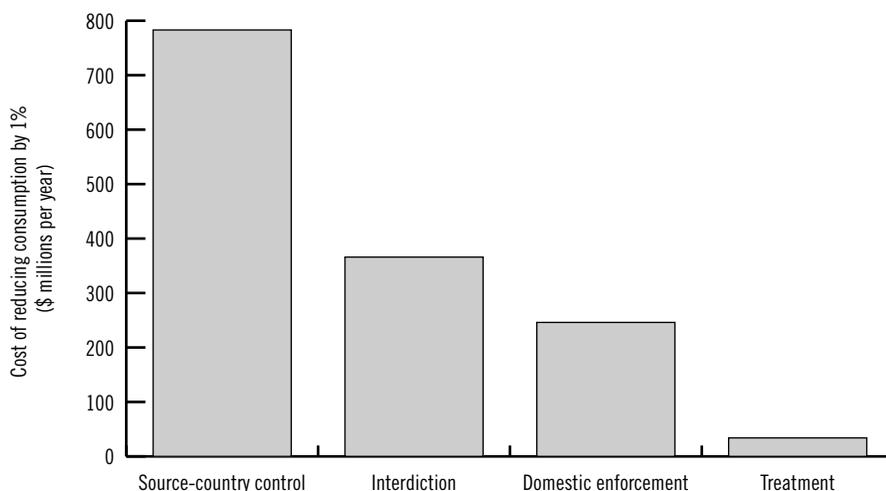
⁵² Leshner (1999), p. 1316; and Duhamel (2000).

⁵³ Caulkins et al. (2005), p. 38.

⁵⁴ Reuter (2001), pp. 16–17.

⁵⁵ Nearly half of those imprisoned on drug charges in the US are African-American (Maguire and Pastore (2001); Harrison and Beck (2002)). They tend to be part of the vast numbers (about 200,000) involved in retailing drugs, and earn little above the minimum wage. The reason they are willing to take the risk of imprisonment and violence at the hands of competitors and collaborators for such meager rewards is due to the low earnings in alternative occupations for the underclass. See Reuter (2001).

Figure 3: Cost of decreasing cocaine consumption by 1 percent with alternative cocaine-control programs



Source: Rydell and Everingham (1994), Fig. S.3, p.xiv

and policy concluded, not “much can be expected of programs outside US borders, which have had little effect on US drug problems. Crop eradication and substitution, in particular, show minimal promise. Close to the drug source, costs are so low that enforcement-induced increases are likely to have no observable effect on street prices. The same is true of increases in the cost of land and labor for producing coca or opium”.⁵⁶

Conclusion

Our conclusions can be brief. The all important War on Terror in Afghanistan is being undermined by the supply control measures of the War on Drugs. These measures are ineffectual in dealing with the US drug problem, which is better dealt with through treatment based on ‘coerced abstinence’ of the small proportion of the population who are hard core drug users rather than the enforcement of prohibition. As such J. S. Mill’s views on addiction remain valid both in theory and in practice.

⁵⁶ Caulkins et al. (2005), p. 38.

Bibliography

Becker, G. and K. Murphy (1988): “A theory of rational addiction”, *Journal of Political Economy*, 96: 675–700.

Becker, G., M. Grossman and K. Murphy (1994): “An empirical analysis of cigarette addiction”, *American Economic Review*, 84: 396–418.

Becker, G., K. Murphy and M. Grossman (2004): “The market for illegal goods: the case of drugs”, *NBER Working Paper*, No. 10976, NBER, Cambridge, Mass.

Caulkins, J. P. (1995): *Estimating the Elasticities of Demand for Cocaine and Heroin with Data from 21 Cities from the Drug Use Forecasting Program, 1987–1991*, Computer file, ICPSR version, Rand Corp., Santa Monica.

Caulkins, J. P., P. Reuter, M.Y. Iguchi, and J. Chiesa (2005): *How Goes the “War on Drugs”?: An Assessment of U.S. Drug Problems and Policy*, Occasional Paper, Rand Corp., Santa Monica.

Cavalli-Sforza, L. L. (2000): *Genes, Peoples and Languages*, Farrar, Strauss and Giroux, New York.

Chang, F. M., J. R. Kidd, K. J. Livak, A. J. Pakstis, and K. K. Kidd (1996): “The world wide distribution of allele frequencies in the human dopamine D4 receptor locus”, *Human Genetics*, 98: 91–101.

Chen, C., M. Burton, E. Greenberger, and J. Dimitrieva (1999): “Population migrations and the variations of dopamine D4 receptor allele frequencies around the globe”, *Evolution and Human Behavior*, 20: 309–24.

Duhamel, L. M. (2000): “Drug use outcomes in four substance abuse treatment studies”, NEDS Fact Sheet 29, Center for Substance Abuse Treatment, Washington DC.

Grossman, M. and F. J. Chaloupka (1998): “The demand for cocaine by young adults: A rational addiction approach”, *Journal of Health Economics*, 17: 427–74.

Harrison, P. M. and A. J. Beck (2002): *Prisoners in 2001*, Bureau of Justice Statistics, Washington DC.

Holloway, A. (2006): “Opium, corruption and the Taliban: the deadly alliance that our troops have to meet”, *Daily Telegraph*, 23 April 2006 (available at www.telegraph.co.uk).

Houthakker, H. and L. Taylor (1966): *Consumer Demand in the United States 1929–1970*, Harvard, Cambridge, Mass.

Kapoor, L. D. (1997): *Opium Poppy: Botany, Chemistry and Pharmacology*, New York.

Krueger, A. O. and C. E. Aturupane (1998): “International trade in ‘bads’”, in H. Giersch (ed): *Merits and Limits of Markets*, Springer, Berlin.

Lal, D. (2000): *Smoke Gets In Your Eyes*, FMF Monograph no. 26, Free Market Foundation, Sanditon, Johannesburg.

Lal, D. (2003): “Free trade and laissez faire—has the wheel come full circle?”, *The World Economy*, 26 (4): 471–82.

Lal, D. (2004): *In Praise of Empires*, Palgrave-Macmillan, New York.

Lal, D. (2006): *Reviving the Invisible Hand*, Princeton, NJ.

Lal, D., H. Kim, G. Lu, and J. Prat (2003): “The welfare effects of tobacco taxation: estimates for 5 countries/regions”, *Journal des Economistes et des Etudes Humaines*, 13 (1): 3–20.

Leshner, A. I. (1999): “Science-based views of drug addiction and its treatment”, *JAMA*, 282 (14): 1314–16.

MacCoun, R. and P. Reuter (2001): *Drug War Heresies*, Cambridge.

Maguire, K. and A. L. Pastore (2001): *Sourcebook of Criminal Justice Statistics 2000*, Bureau of Justice Statistics, Govt. Printing Office, Washington DC.

McNeil Jr., D. G. (2007): “Fear of morphine dooms third world poor to die painfully”, *International Herald Tribune*, 9 September 2007.

Meo, N. (2008): “The obstacles facing NATO in Afghanistan”, *Daily Telegraph*, 22 June 2008 (available at www.telegraph.co.uk).

Mill, J. S. (1859/1910): *On Liberty*, Everyman’s Library, London.

Miron, J. A. (2004): *Drug War Crimes*, Independent Institute, Oakland, Calif.

Miron, J. A. and J. Zwiebel (1995): “The economic case against drug prohibition”, *Journal of Economic Perspectives*, 9(4): 175–192.

Naim, M. (2007): *Illicit*, Arrow Books, London.

Perl, R. F. (2001): *Taliban and the Drug Trade*, CRS Report for Congress, RS 21041, Oct. 5, 2001, Library of Congress, Washington DC.

Phelps, E. S. and G. del Castillo (2008): “A strategy to help Afghanistan kick its habit”, *Financial Times*, 4 January 2008.

Rashid, A. (2000): *Taliban*, Yale University Press, New Haven.

Reuter, P. (2001): “Supply-side drug control”, *The Milken Institute Review*, First Quarter 2001, pp. 15–23.

Richards, J. (2001): *Opium and the British Indian Empire: The Royal Commission of 1895*, Cambridge.

Rydell, C. P. and S. S. Everingham (1994): *Controlling Cocaine: Supply versus Demand Programs*, Drug Policy Research Center, Rand, Santa Monica, CA.

Schelling, T. C. (1978): “Economics, or the art of self-management”, *American Economic Review*, 68: 290–4.

Sen, A. K. (2007): “Unrestrained smoking is a libertarian half-way house”, *Financial Times*, 11 February 2007.

Thornton, M. and S. W. Bowmaker (2008): “Recreational drugs”, in J. Meadowcroft (ed): *Prohibitions*, Institute of Economic Affairs, Profile Books, London.

Trocki, C. A. (1999): *Opium, Empire and the Global Political Economy*, London.

United Nations Office on Drugs and Crime (UNODC) (2008): *World Drug Report 2008*, UN, New York.

UNODC (2003): *The Opium Economy in Afghanistan*, UN, New York.

van Ours, J. C. (1995): “The price elasticity of hard drugs: the case of opium in the Dutch East Indies, 1923–38”, *Journal of Political Economy*, 103: 261–79.

Vanyukov, M. M. and R. E. Tarter (2000): “Genetic studies of substance abuse”, *Drug and Alcohol Dependence*, 59: 101–23.

Whybrow, P. C. (2005): *American Mania*, Norton, New York.

Yongming, Z. (1999): *Anti-drug Crusades in Twentieth Century China: Nationalism, History and State Building*, New York.

