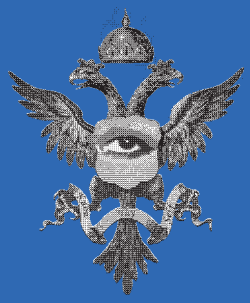
THE BECKLEY FOUNDATION
DRUG POLICY PROGRAMME



REDUCING DRUG RELATED CRIME: AN OVERVIEW OF THE GLOBAL EVIDENCE

Alex Stevens, Mike Trace and Dave Bewley-Taylor

REPORT FIVE

Reducing Drug Related Crime: an overview of the global evidence

Alex Stevens, Mike Trace and Dave Bewley-Taylor
2005

We gratefully acknowledge the role of Professor Mike Hough and an anonymous reader in improving an earlier draft of this report. Any errors remain the authors' responsibility.

The Beckley Foundation Drug Policy Programme (BFDPP) is a new initiative dedicated to providing a rigorous, independent review of the effectiveness of national and international drug policies. The aim of this programme of research and analysis is to assemble and disseminate material that supports the rational consideration of complex drug policy issues, and leads to a more effective management of the widespread use of psychoactive substances in the future.

SUMMARY

This report presents an overview of the global evidence on the reduction of drug-related crime. Its main findings are:

- Many current claims on drug-related crime overstate the amount of crime that is caused by drug use and the precision of our knowledge of this link.
- The link between crime and drug use is complex. Many persistent offenders frequently use illicit drugs, and drug dependence may amplify offending. However, both crime and problematic drug use are linked to other factors, including socio-economic deprivation.
- Activities that reduce the overall levels of crime and problematic drug use have the greatest scope for reducing drug-related crime, so the solutions to drug-related crime will involve wider social and economic policies.
- We propose the following model for the reduction of drug related crime
  - Primary – universal approaches that aim to prevent drug-related crime before it occurs.
  - Secondary – approaches that focus on those people who are most at risk of perpetration of drug-related crime.
  - Tertiary – approaches that focus on people who have already committed drug-related crime.
- Within this model, we provide a simplified matrix, based on summaries of the international evidence, of policies and programmes that are more or less likely to be cost-effective in reducing drug-related crime.

Summary of available evidence on measures to reduce drug-related crime

Level of prevention	Cost-effective	Promising	Probably not cost-effective
Primary	Situational crime prevention	Poverty reduction	Drug law enforcement
Secondary	Support to families and children	Some school-based education initiatives Suppression of organised crime	Most drug education programmes
Tertiary	Drug treatment	Alternatives to imprisonment	Large-scale imprisonment Drug testing

INTRODUCTION

This is the fifth report in our current series analysing the effectiveness of drug policies in reducing drug use and related problems. The first report articulated our concern that the current international policy framework is not meeting its objective of significantly reducing the scale of the illicit drug market, and that the number of drug users is expanding in most regions of the world. In our second report, we argued that the way to resolve the consequent disagreements on the future direction of policy should be through an objective review of the effectiveness of current policies and programmes, and suggested a broad methodology and approach for such a review to be conducted. This report proposed six fundamental aims for drug policies, the achievement of which could be measured over time to judge whether progress was being made. We have now moved on to consider the current global evidence base for the effectiveness of specific policies and activities that are designed to impact on drug-related problems. We started this review in our third report, published in December 2004, which assessed the impact of efforts to reduce the overall scale of drug markets and drug use through supply reduction and law enforcement programmes. Having found very little evidence that these approaches can achieve significant and sustained reductions in overall levels of drug use, we have moved on to look at policies and programmes that target specific drug-related harms, starting with efforts to reduce the health damage associated with drug use - primarily blood borne infections and overdose deaths. Our fourth report concluded that there is much that municipal authorities, governments and international agencies can do to reduce the health problems that are associated with drug use. We now turn our attention to the other major area of harm associated with drug use and illegal markets - that of drug-related crime. Citizens and their governments are right to be worried about drug-related crime. Whether it is the fraud, corruption and intimidation perpetrated by powerful criminal organisations, or

the petty thefts and robberies committed by drug addicts to pay for their drug purchases, it is ordinary citizens who suffer the consequences. Due to the complexity of the links between different types of crime, and drug use and markets, it is only relatively recently that governments have designed and pursued targeted policies that have the objective of reducing drug-related crime. This trend has also been driven by the growing awareness of the high proportion of all crime that is committed by people involved in some way in the drug market - although we argue here that care must be taken not to overstate this point.

Of course, the authorities have for many decades fought an ongoing battle with organised crime in general, and specifically the gangs involved in the illegal drug trade. This 'war' has had numerous operational successes, with the dismantling of hundreds of national and international trafficking groups. While the bravery and professionalism of the various enforcement agencies engaged in these operations cannot be questioned, we have to accept that this has not led to an overall reduction in the level of criminal activity surrounding the drug market.

We are now able to review a number of different approaches to reducing drug related crime that not only target the overt threat of the traffickers, but also seek to tackle the underlying causes of drug abuse and criminal behaviour, or reduce the opportunities for offenders to commit crimes, or rehabilitate those offenders when they have been arrested. While the global research base in this area is currently not sufficiently developed for us to draw firm policy conclusions, we do feel able to indicate what approaches are likely to be effective, and what actions, according to experience and evidence so far, are unlikely to achieve the objective of reducing crime.

The evidence we draw on comes primarily from the developed countries of the North, which tend to face broadly similar problems of drugs and crime, although the patterns and extent of drug use and criminality may differ. There is very little information available from developing countries, which have very different socio-economic conditions, so the suggestions we make are less directly applicable in these countries.

First, we need to define the types of crime that we are talking about, and analyse the extent to which they are caused by drug use and the existence of illegal drug markets.

THE NATURE AND SCALE OF DRUG-RELATED CRIME

In order to create and prioritise solutions to a policy problem, we need to know how big the problem is, and what causes it. Neither of these questions has a simple answer in the case of drug-related crime.

How is crime related to drugs?

For the purposes of this report, we will restrict ourselves to a definition of drug-related crime that excludes violations of drug laws and includes those crimes that are committed by people who are using drugs, or in the course of buying and selling drugs. The drugs that are most commonly referred to in discussions of drug-related crime are heroin and cocaine. The links between these drugs and crime are commonly classified, following Goldstein (1985), in three categories: psycho-pharmacological; economic-compulsive and systemic. There is a fourth explanation; that the link between drugs and crime is not causal, but that both are related to other factors.

Drugs and the brain

Supporters of tight control of drug availability tend to emphasise the psycho-pharmacological effects of drugs on the brain. Psychoactive drugs have pharmacological properties that affect mood, cognition and therefore offending. It has been suggested that use of drugs causes violent crime by affecting metabolism (Amen, Yantis, Trudeau, Stubblefield, & Halverstadt, 1997) and electrophysiological activity in the brain (Lavine, 1997). It has also been shown that prolonged drug use causes long-term changes in the areas of the brain that are linked to cognitive functions that may have an effect on criminal behaviour (Sinha & Easton, 1999). There is continuing debate over the effects of particular drugs on psycho-pharmacological violence, with cocaine as the most commonly cited suspect. Cannabis is thought to have less association with crime, as intoxication reduces aggression (although withdrawal and related mental health problems may be linked to increased aggression in some cases) (Hoaken & Stewart, 2003). Heroin use is thought to be linked more to property crime than to violence among its users (Farabee, Joshi, & Anglin, 2001; Fischer, Medved, Kirst, Rehm, & Gliksman, 2001), while non-prescribed use of tranquillisers is rarely associated with crime, which may be due to a combination of their psychoactive effects and their low price. The lion's share of psycho-pharmacologically induced crime is probably linked to alcohol use, which has been shown to reduce inhibition and increase aggression, and is much more widespread than use of illicit drugs.

Crimes committed to get drugs

It is often suggested that addicted users of illicit drugs are compelled to commit crimes in order to get money to buy them. (Ball, Rosen, Flueck, & Nurco, 1981; Parker & Bottomley, 1996; Parker & Newcombe, 1987). This economic-compulsive link is perhaps the most widely supposed link between drugs and crime, and high proportions of crime are attributed to dependent users of cocaine and heroin (and methamphetamine in the USA). This link is emphasised both by proponents of reducing use by reducing supply, and also by those who argue that the prohibition of drugs artificially inflates their prices, and therefore the amount of crime that is committed to buy them.

But critics of this economic explanation have pointed to problems with its simplicity. They argue, for instance, that acquisitive crime is not caused by drugs, as criminal activity often predates drug use (Matthews & Trickey, 1996; Pudney, 2002; Sarnecki, 1985). It has also been argued that the connection works in the opposite direction; that crime intensifies drug use by providing increased income which enables increased drug use (Burr, 1987).

Crime and the drug market

As the drug market is illegal, people who seek to control it, or to prevent or remedy transactions they perceive as unfair, will resort to violence and corruption. Again, this view is often proposed by those who believe that it is not illicit drugs, but their prohibition, that leads to crime. Links have been made between local drug markets, especially crack markets, and violence in inner cities (Inciardi, 1999). But systemic effects on crime are felt most severely in those countries where coca and opium are grown and where the rule of law is challenged by internal conflict. In Afghanistan, Colombia, Myanmar, for example, civil strife combined with the production and transit of large amounts of illicit drugs to meet demand in richer countries of the North have brought widespread corruption of business and governments and have fuelled terrorism and paramilitary activity (see the reports of the Transnational Institute at www.tni.org).

Non-causal connections between drugs and crime

Goldstein's three suggested explanations make a direct link between drugs and offending, and thereby imply that drug policy can have a major impact on crime. Others argue that the link is not direct. A report of several Portuguese studies concluded "[t]here is no causal relationship between drug use and crime. There is a complex system of connections between drugs and crime: the drugs/crime complex... It is a differential delinquent lifestyle", with no generalisable link that explains all drug-related crime (da Agra, 2002). This view is supported by other researchers who have suggested that drugs and crime are common elements of a deviant or delinquent lifestyle (Byqvist & Olsson, 1998; Harrison & Gfroerer, 1992; Kruezer, Roemer-Klees, & Schneider, 1991; Lab, 1992). Others have argued that drugs are not causally linked to crime, but rather that underlying social factors, including inequality and deprivation, produce both problematic drug use and crime (Baron, 1999; Buchanan & Young, 2000; Edmunds, May, Hearnden, & Hough, 1998; McBride & McCoy, 1993). Drug use and crime can both be seen as "afflictions of inequality" (Wilkinson, 1996). If this is the case, the impact of drug policy on crime is likely to be less dramatic.

The complexity of the drug-crime link

The best way to summarise this relationship may be to see that many people who persistently commit crimes also frequently use illicit drugs, and that the two activities may amplify and each other (McSweeney & Hough, 2005 in press) and may prolong the duration of the crime and drug using career. But, taken together, the various explanations suggest that there is no clear causal link in either direction between drug use and crime; rather the relationship between these two phenomena is complex and intricate (Seddon, 2000). This implies that policy responses that are focused on only one part of the drug-crime link, while ignoring others, will be unlikely to succeed in reducing overall crime. It also suggests that drug policies will not necessarily play the greatest role in reducing drug-related crime.

How much crime is drug-related?

Crime is notoriously hard to measure, and problematic drug use even more so. Both activities are illegal, and so are hidden from view. Combining the measurement of both activities into a figure for drug-related crime promises to be a very inexact science indeed, and has tended to produce exaggerated claims of precision and scale.

"[S]tatistics indicate that 60% to 80% of all crime is drug related", claim a team of American psychologists (Deitch, Koutsenok, & Ruiz, 2000). Such high claims from researchers have tended to be repeated by drug policy campaigners (e.g. Rolles, Kushlick, & Jay, 2004, who attribute half of crime to the criminogenic aspects of prohibition), and statements have been made by politicians such as "the greatest cause of crime, as all law-abiding people know, is drugs" (Commons Hansard Debates, 2004). However, there are several problems with such claims.

Data on drug use by offenders who have been caught, or on drug users who have entered treatment, has often been extrapolated to provide estimates of the proportion of crime that can be attributed to drug use. The Arrestee Drug Abuse Monitoring (ADAM) programme has been implemented in at least eight countries (Taylor, 2002) and has given estimates as shown in Table 1.

These figures show that a high proportion (between 48 and 78%) of people arrested test positive for drugs in many locations. But warnings have often been given of the care that should be used in extrapolating such figures, which come from sites that may not be representative of the whole country, from widely differing sample sizes, and compare drugs which are detectable in urine for different lengths of time after use.

The idea that a lot of crime is committed by drug users is also supported by research on people who are in prison or drug treatment. Studies repeatedly find that high proportions of prisoners have used drugs and have had drug problems, and that drug treatment clients report that they have committed a lot of crime. Translation of these studies into policy has tended to assume that, because there is an overlap between reported levels of crime and drug use in these populations, a high proportion of crime is caused by drug use. This is an over-simplistic view of the drug-crime link. Prisoners and arrestees may be using more drugs than the rest of the population. And it is likely that their offending accelerates during periods of heavy drug use (Farabee, Joshi, & Anglin, 2001), and also that many problematic drug users finance their drug use by offending (Hough, 2002). But this does not mean that drug use causes all their crimes.

As noted above, criminals often start offending before they use drugs, and they sometimes continue after they have stopped using drugs (Nurco, 1987). A Canadian team of researchers (Pernanen, Cousineau, Brochu, & Sun, 2002) asked prisoners about the links between their use of substances and their crimes. A high proportion of the prisoners reported using drugs, but fewer linked this to their offending. "[T]he proportion of crimes committed by federal and provincial inmates that are attributed to the use of alcohol and/or illicit drugs in Canada was estimated as being between 40% and 50%. Between 10% and 15% are attributed to illicit drugs only, between 15% and 20% are attributed to alcohol only, and 10% to 20% are attributed to both alcohol and illicit drugs". These estimates, while still attributing a

Table 1: Proportions of arrestees testing positive for drugs in ADAM.

Country	Year	Any drug	Cannabis/Marijuana	Opiates	Cocaine
Australia (n=1,104)	1999	65-78%	47-65%	13-65%	0-12%
Chile (n=90)	1999	48%	31%	0%	27%
England & Wales (n=740)	1998/9	69%	49%	29%	20%
Netherlands (n=80)	1999	61%	41%	17%	32%
Scotland (n=427)	1999	71%	52%	31%	3%
South Africa (n=878)	1999	49%			
USA (n=21,524)	2001	64%	43%	5%	29%

Source: Taylor (2002), except for USA (Arrestee Drug Abuse Monitoring Program, 2002), for which the figures given are medians of results at 33 sites.

significant proportion of crime by prisoners to drug use, suggest that this proportion is lower than suggested by the high proportions who have used drugs, and also suggest again that alcohol has a greater part to play in generating crime than illicit drugs.

While problematic at the level of individuals, the evidence for the link between crime and drug use is even weaker at the level of cities or countries. Recent American research, using figures from the ADAM programme and police records of crime in 22 cities between 1989 and 1998 found no link between levels of use of heroin or cocaine among arrestees and crime rates. In contrast, both violence and property crime were associated with higher levels of socio-economic deprivation, and violence was associated with higher levels of alcohol use (Martin, Maxwell, White, & Zhang, 2004). Exploratory analysis of the rate of problematic drug use in European countries in 2000 (EMCDDA, 2004) and rates of crime reported in the International Criminal Victimisation Survey (Van Kesteren, Mayhew, & Nieuwbeerta, 2000) supports the suggestion that overall crime rates are not linked to overall rates of problematic drug use. For example, Scotland apparently has by far the highest reported rate of problem drug use (16.6 problem drug users per 1,000 population), but a middle-ranking annual prevalence of criminal victimisation (23%). The Netherlands, on the other hand, has relatively low levels of problem drug use (2.7 per 1,000), but higher levels of criminal victimisation (25%).

A final and overarching problem in attributing crime to drugs comes from the notorious criminological 'dark figure'. Put simply, we do not know for certain how many crimes there are, and we do not know who is committing most of them (as the vast majority of crimes are either unreported or undetected), so how can we know what proportion is committed by a certain group of people? This problem is especially acute for those crimes that take place in faraway countries, or are committed by people who have the power to cover them up. Existing studies of the drug-crime link focus on the developed countries of the North, where the research funds are available to carry out such studies. And they concentrate on street-level crime; the thefts, burglaries, robberies, assaults and drug busts that account for the majority of arrests and incarcerations. More serious crimes, such as the corruption of governments, businesses and banking systems that are associated with the drug trade, and the crimes against humanity that are carried out by drug traffickers, paramilitary and governmental forces in the countries of drug production and transit, have not been explored in any depth in the existing research on drugs and crime.

The use of figures as shakily founded as those on drug use and crime is wide open to criticism as "voodoo criminology" (Young, 2004). We should be sceptical about any claims to know how much crime is drug-related. However, the evidence presented here suggests that it is likely to be lower than the "60 to 80%" that has been claimed.

The basis for action on drug-related crime

When looking for successful measures to prevent crime, we should consider drugs as one factor, and often not the most important, in the decision to offend. Some people commit crimes while under the influence of drugs, but alcohol use seems to be a more important cause of 'psycho-pharmacological' crime. Many problematic drug users steal to get money for drugs, but it is not known whether the use of drugs alone causes the bulk of 'economic-compulsive' crime, or if it is linked to the socio-economic marginalisation that is experienced by most problematic drug users, or even to the high price of drugs. This suggests that crimes that are related to drugs by the correlation of drug use and offending are most likely to be successfully reduced by measures that are effective in reducing crime generally.

While acknowledging the complexity of the drug-crime link, it is clear that measures that have been shown to be effective in reducing drug-related crime should be supported. Even small reductions in crime rates can produce large benefits, in terms of reduced victimisation and reduced costs in the criminal justice system. This report goes on to summarise the available evidence on some of the main approaches to the reduction of drug-related crime.

ACTION ON DRUG-RELATED CRIME

Crime and drug prevention

We should not only look to policies that are focused on drugs as the most likely to reduce drug-related crime. A comprehensive approach is necessary, which makes use of policies and measures that have been shown to be effective in reducing crime generally. Actions to prevent crime and drug use can be seen as operating at three levels; primary, secondary and tertiary. For the prevention of drug-related crime, these levels are:

- Primary – universal approaches that aim to prevent drug-related crime before it occurs.
- Secondary – approaches that focus on those people who are most at risk of victimisation and perpetration of drug-related crime.
- Tertiary – approaches that focus on people who have already committed drug-related crime.

In this section, we describe actions to reduce drug-related crime at each of these levels. It should be noted that, as mentioned above, most of the available evidence refers to street level crime, including theft, burglary, robbery and assault. It is these crimes which most of the measures described below are primarily intended to prevent. Some of these actions focus on breaking specific drug-crime links, be they psycho-pharmacological, economic-compulsive or systemic. But successful actions also include those that have proven to be effective in producing general reductions in offending.

Primary prevention actions

Measures to improve socio-economic conditions

As discussed above, it is necessary to investigate why people choose to use illicit drugs. This avoids the "pharmacological determinism" (Reinarman & Levine, 1997) of ignoring the choices people make in the social contexts they are in. This line of argument often leads to a link between social deprivation and high rates of crime and drug use. High rates of delinquency are said to be encouraged by the effect of poverty on parenting and the supply of delinquent peers (James, 1995; Weatherburn & Lind, 2001). This leads to suggestions that policies that reduce inequality and deprivation will also lead to reductions in drug-related crime.

The evidence for this suggestion is extremely hard to assess. It is very difficult to evaluate the impact of policies in reducing unemployment and income inequality, improving health,

education and youth services, increasing social cohesion and reducing family conflict. It is even more difficult to attribute any subsequent changes in drug-related offending to the original policy. There are some cases where reductions in offending have been attributed to long-term investment in community development, in collaboration with community groups (e.g. on the Southmead estate in Bristol, University of the West of England, 2002). On a wider scale, there are some countries, notably Japan and in Scandinavia, where strong welfare systems coincide with low rates of economic inequality, drug use and crime. These countries also have traditions of high social cohesion and intolerance of drug use, which may be just as important in reducing drug-related crime. But Scandinavian countries particularly tend to see social development as the best crime prevention policy (Kuure, 2002).

Other countries have made deliberate attempts to reduce crime through social development, including Canada, France, Australia and Finland (The John Howard Society of Alberta, 1995). Despite the lack of conclusive evidence on the effectiveness of this approach, the strong theoretical support and empirical evidence for the link between social deprivation and drug-related crime means that we can assume that effective measures to tackle social exclusion will also have an impact on rates of drug related crime.

Enforcement of drug laws

The prohibition-oriented laws that all signatories of the UN Conventions on drugs are required to uphold are designed to reduce the negative effects of drug use, including crime. If the production, transit and distribution of drugs can be stifled, then it is assumed that there will be reduced drug use, fewer drug users, and therefore less psycho-pharmacological or economic-compulsive crime. Unfortunately, the available evidence suggests that supply-side measures against the production, traffic, distribution and possession of drugs have not reduced, let alone eliminated the drug trade, and are therefore not cost-effective in reducing crime. It is possible that strict enforcement actually increases systemic crime, by increasing the price of drugs and the incentives for offenders to use violence to control their distribution. And law enforcement cannot, by itself, improve the socio-economic conditions that are associated with crime.

Extensive programmes are in place to reduce the production of coca and opium in countries such as Colombia, Peru, Bolivia, Myanmar, Laos and Afghanistan, but overall output has remained stable despite these efforts (Transnational Institute, 2003). There have been significant costs to these programmes, in addition to the money spent on them. For example, the Myanmar government is currently carrying out a forced programme of opium eradication in Shan State. With no provision for alternative livelihoods, hunger and the displacement of thousands is likely (Chouvy, 2005).

Examples of the success of attempts to reduce the import of drugs into a particular country are rare, and tend to be related to negative, rather than positive effects on crime. The Australian heroin drought, from 2000 to 2002, saw heroin prices and crime rise, and an increase in use of amphetamines (Bush, Roberts, & Trace, 2004; Donnelly, Weatherburn, & Chilvers, 2004). Thailand's efforts to eradicate heroin production have been followed by increased use of methamphetamine. There are also anecdotal reports that the first large-scale use of methamphetamine in California, from where the drug has spread across the USA, was associated with a cocaine drought, which inspired dealers and users to switch drugs.

Targeting those involved in the distribution of drugs also fails to prevent their use and the associated crime. While the demand for drugs is relatively stable, and supply is restricted, the profits to be made are great, and ready replacements are found for distributors who are taken out of any stage of the process. For example, the recent British Derbyshire Drug Market Project aimed to create a shortage of heroin by arresting all known heroin dealers, but found that they were replaced so quickly that availability of the drug was not significantly affected (Parker, 2004). Greater success has been claimed for the Tower project in Blackburn, which uses a "carrot and stick" approach of intensive supervision, market disruption and drug treatment for drug-related offenders. The introduction of this project was accompanied by a significant fall in recorded crime, but this fall began before the project started, can also be attributed to other police activities and was similar in nearby areas in which the project was not working. The evaluators suggested that the Tower project can best be seen as "a crackdown consolidation" approach which can sustain earlier falls in crime (Chenery & Deakin, 2003).

"Zero tolerance" policing has been promoted as the answer to street-level offending, with reference to the fall in crime in New York during the 1990s, where the approach included encouraging ordinary police officers to arrest drug dealers, instead of leaving them to specialist drug squads (Bratton, 1998). However, the crime drop in New York can also be attributed to other factors and began before the introduction of this approach (Bowling, 1999). Other countries and American cities that did not adopt "zero tolerance" approaches also saw crime fall. This assertive style of policing also had negative consequences, including alienating members of ethnic minority communities further from the police and filling up the courts and prisons with relatively minor offenders (Wacquant, 1999). A study across the counties of New York State found that strict enforcement of drug laws between 1996 and 2000 was associated with increases, not decreases in other crimes (Shepard & Blackley, 2005).

Generally, the efforts of law enforcement agencies to reduce the supply and use of drugs have not met with great success. It has been estimated that source country control, interdiction and domestic enforcement of laws relating to cocaine in the USA do not produce benefits as high as their costs, even when ignoring the negative externalities for the source countries, for the families of prisoners, and for the victims of any increases in crime (Reuter & Boyum, 2005; Rydell & Everingham, 1994).

Situational crime prevention (also known as crime prevention through environmental design)

Increasingly, efforts to reduce crime do not try to change the legal, penal or socio-economic context in which crime takes place. Instead, they try to limit the occasions when motivated offenders coincide with criminal opportunities in the absence of capable guardians and to reduce the utility of crime for offenders. In other words, they attempt to make offending difficult and to ensure that crime does not pay. Such situational crime prevention (SCP) does not specifically target drug-related crime, but has proved effective in reducing crimes commonly associated with drugs, especially thefts that are committed to get money for drugs.

Four main types of situational crime prevention have been suggested (Tilley & Laycock, 2002) as increasing the effort, increasing the risks, reducing the reward and removing excuses. The most obvious forms of SCP involve target-hardening, such

as increasing the difficulty of crime by improving locks on properties and cars, and reducing the benefits by making it difficult to sell stolen goods by marking property or otherwise making products useless to illegitimate purchasers. The effectiveness of such efforts has been demonstrated in a large number of studies on both sides of the Atlantic and beyond (Pease, 2002). Debates over displacement and the sustainability of the benefits of SCP continue. The balance of evidence suggests that well-designed and implemented situational crime prevention initiatives do tend to reduce crime, and may even diffuse benefits beyond the area of implementation, but it may be that drug dependent offenders are more motivated than others, and so are more likely to move their offending to areas and targets where SCP is less prevalent.

Two of the highest profile examples of SCP are the use of closed circuit television (CCTV) and the design of products and spaces to reduce crime. The UK is said to be the country with the highest concentration of CCTV cameras, but they are increasingly common internationally. Research on CCTV suggests that it is not universally effective in reducing all crimes. Rather, it tends to work for some crimes in some locations. For example, in a meta-analysis of 18 studies of CCTV, there were good reductions in thefts from car parks, but less positive effects in the reduction of violent crimes in city centres. Overall, there was a small but significant reduction in recorded crime across these sites of 4% (Welsh & Farrington, 2002). More recent reports suggest that CCTV does not inevitably lead to reduced crime, especially where there is poor targeting of the CCTV resources (Gill & Spriggs, 2005), and that CCTV may increase recorded rates of violence, but reduce injuries, as the police can use the cameras to identify and respond quickly to violent incidents (Shepherd, cited by Rees, 2005).

There have also been advances in "designing out crime". This brings the elements of situational crime prevention into the process of designing places and products so that they are less conducive to crime. A good example is the use of "defensible space" (Newman, 1972) principles in the building or remodelling of public housing. According to these principles, casual access to buildings should be limited. Natural surveillance should be optimised by making sure that public spaces are overlooked and by eliminating blind corners and hiding places. CCTV, street lighting and landscaping can also be used to increase surveillance. Boundaries of blocks and dwellings should be clearly defined and secured. Doors and windows should have high quality locks. An evaluation in West Yorkshire found a 30% reduction in recorded crime in public housing estates to which these principles had been applied (Armitage, 2000).

A danger of situational crime prevention approaches is not only that they can lead to displacement of crime, but also that they can lead us to the creation of a divisive "fortress society" (Davis, 1990) and can add to the social exclusion experienced by the people who live in high-crime areas. Installation of CCTV in residential estates may signal to the people who live there that they are not to be trusted. Defensible space design may eliminate an area's trees and paths, reducing the enjoyment of law-abiding pedestrians. The potential for crime prevention should be weighed against other issues when situations are being designed.

Secondary prevention actions

Support for young children and families

One of the few social crime prevention approaches that does have strong and specific empirical support is the provision of support to children and families. This is usually focused on areas where incomes are low and crime and drug use rates are high, and so is included here as a secondary prevention measure. The theory is that such efforts can reduce the risk factors for delinquency (such as poor educational attainment, aggression, impulsivity, poor social skills, harsh and inconsistent parenting) and boost the protective factors (such as consistent and supportive parenting, commitment to education, empathy for others).

Perhaps the most well-known example of the success of support in early life is the Perry pre-school programme. This involved random assignation of 123 African American children from low income families to receive either participatory learning and family support at ages 3 and 4, or to get no additional support. Recent interviews with these people at age 40 have again shown that those who took part in the programme were less likely to use drugs, to be arrested and to be unemployed. They were more likely to graduate high school and college and to earn more. At age 40, the savings to the public purse were calculated as $12.90 per dollar invested, with the vast majority coming from reduced crime (Schweinhart, Montie, Xiang, Barnett, Belfield, & Nores, In press). Impressive results have also been found by other early intervention programs, including Fast Track in four US cities (Prinz, 2002), SAFE Children in Chicago (Tolan, 2004) and the Montréal Longitudinal and Experimental Study (Tremblay, 2004)[1].

The success of such programmes has led to the expansion of the nationally funded Head Start programme in the USA. It has also inspired the development of Sure Start in the UK, a national programme which supports families in disadvantaged communities. Early results from Sure Start have been encouraging (The National Evaluation of Sure Start, 2004). Other countries, such as Australia, also have increasing provision of family and early childhood support (National Crime Prevention, 1999).

The success of early intervention, compared to the less certain results of interventions with older children and adults, has lead some to comment that the later in life the intervention comes, the less clearly beneficial its results (Harrell, Cavanagh, Harmon, Koper, & Sridharan, 1997). Perhaps the most promising way to reduce drug-related crime in the long-term is to provide greater support to low income families.

Drug education

The people who are most at risk of getting involved in drugs and crime are teenagers. They have often been targeted by programmes which seek to teach them of the dangers of drug use, with the aim of encouraging them to remain abstinent. If young people remain abstinent, then they will not be influenced by drugs, either economically or pharmacologically, to commit crimes, and the size of the market that leads to systemic crime will be reduced. Most countries who have recognised that they have a drug problem have adopted drug prevention education as one of the means to combat it. The most famous initiative is the Drug Abuse Resistance Education programme (DARE), which has reportedly spread to over 60% of US school districts, to 480 schools in the UK, and to 56 other countries (although federal funding for DARE in the USA has recently been drastically cut).

[1] More proven and promising North American programmes are listed at the website http://www.promisingpractices.net/programlist.asp.

This spread happened despite strong evidence that DARE does not reduce drug use (General Accounting Office, 2003). The GAO report is one of the many research reviews to find that drug prevention education programmes either have no effect, or have minimal, short-term effects. It has been suggested that drug prevention education is primarily a symbolic action in the face of public alarm about drug use (Hawthorne, 2001). In particular, programmes that seek to scare young people away from drugs, or that involve police officers in encouraging children to say no seem to be ineffective. Mass media campaigns also seem not to be effective in reducing drug use and crime (although there have been apparent successes in other areas of public health, such as smoking and drink-driving).

Other researchers have argued that some drug education programmes have been successful, when they have aimed for realistic (e.g. reduced, less dangerous drug use) rather than ideal outcomes (e.g. complete abstinence) (Cuijpers, 2003). The best results in school-based prevention seem to be achieved by programmes that go beyond traditional education to include cognitive-behavioural training, although the effects of even successful programmes tend to be small (Gottfredson, Gottfredson, & Czeh, 2000). It seems that the majority of existing drug education prevention has not learnt the lessons of research on what works.

Preventing the organisation of crime

Much of the crime that is related to drugs is associated with the operation of criminal organisations. These include groups who organise the production and export of drugs from producer countries, and those who arrange the import and distribution of drugs in consumer countries. Throughout the journey from crop to market, there are very high profits to be made, due to the enormous profit margin of products for which production is cheap, demand is high, and supply is legally prohibited. It has been estimated that the price for cocaine and heroin increases between export and retail by about 1,000% (Reuter & Boyum, 2005; United Nations International Drug Control Programme, 1997). With such large and illegal amounts of money to be made, there are large incentives for the use of violence and corruption to enable the market to persist and to compete for profits within it.

If the activities of the organisations involved in the production and distribution of drugs could be curtailed, then it is possible that other drug-related crimes, and especially systemic violence and corruption, would fall. But, unfortunately, there is little evidence available on how to reduce the systemic crime that is committed by criminal organisations. And patterns of organised crime are very different between continents and countries. Here we present two stories of how gang-related crime has been reduced in New York City, one of the most notorious sites for organised crime in the World. They come with the warning that it may be difficult to apply these lessons elsewhere, but with a general observation that preventing the entrenchment of organised crime may offer benefits in reducing drug-related and other crimes.

The first story comes from the fight against the American-Italian "Cosa Nostra", which combined involvement in gambling, loan sharking and the drugs trade with involvement in legitimate businesses, such as waste haulage, produce markets and construction. For decades, this organisation kept a grip on its criminal and legitimate markets through corruption, intimidation and violence. In recent years its influence has declined. This has been attributed to two legal initiatives: the Racketeer-Influenced and Criminal Organizations Act (RICO) and the regulatory initiatives of the Giuliani mayoral administration. RICO reduced the financial viability of organised crime by enabling state agencies to seize assets and to levy steep financial penalties for repeated criminal acts carried out by groups[2]. In New York, the city authorities, concerned by the deep involvement of the Mafia in the provision of public services, created new regulatory powers that made it much harder for criminal gangs to own and operate legitimate businesses. This included the establishment of new regulatory bodies to licence and monitor businesses, and the appointment of private inspector generals to report on corruption in industries such as such as waste-disposal, construction and bars. These regulatory initiatives have been called decisive in ensuring the decline of the Cosa Nostra (Jacobs, Friel, & Radick, 1999).

The second story of reduced crime among criminal gangs has less clear implications for public policy. David Brotherton's study of the Almighty Latin King and Queen Nation in New York tells the story of how a gang that was once notorious for its murderous involvement in the drug trade developed into a "street organisation" which has become a focus for the political and spiritual action of its members (Brotherton, 2004). This metamorphosis is attributed to the development of an "anti-colonial" consciousness among the poor Hispanic members of the organisation, to the growing distaste for violence among a generation of young people who have seen their older brothers die or go to prison, to the increased influence of women within the organisation and to the role of large –scale imprisonment in providing a non-territorial recruiting ground and in deterring continued criminal involvement. Only one of these developments is within the control of policy makers, and large-scale imprisonment (as will be shown below) has significant costs to judge alongside its benefits.

It should be noted that Brotherton's interpretation of the development of this organisation is not shared by the police and the FBI, who continue to see it as a gang which uses political and spiritual activities as a front for continued criminal activity. From this distance, it is impossible to know to what extent this continued targeting is a response to increased politicisation and campaigning against police discrimination and violence. We can use the example of this organisation to show that crime reduction is as much dependent on the choices and developments created by people living in vulnerable communities as it is about the decisions of policy makers who live elsewhere.

Tertiary prevention activities

Imprisonment for incapacitation and deterrence

Of course, many people who are arrested for drug-related offences are sent to prison, and their numbers have been growing across the World in recent years. The greatest rise has been in the USA, which has seen a six-fold increase in the prison population since 1972, but rises have also been seen in many European, Oceanic, Asian, African and other American countries. The main exceptions, where prison populations have remained relatively stable over the last 15 years, are India, Austria, Switzerland and the countries of Scandinavia. The prison population of Finland is one of the few that has fallen. These changes in imprisonment have been independent of changes in crime rates. In many cases,

[2] It should be noted that RICO also has its critics, who point out dangers to civil liberties and its origins in mythical views of organised crime as an alien conspiracy (Geary, 2002).

they have been caused by increases in the imprisonment of drug-related offenders. The majority of federal inmates in the USA are there for a drug charge, and there has been a fifteen-fold increase in prisoners on drug charges in US prisons since 1980.

Imprisonment can be considered the pre-eminent response to people who are caught committing drug-related crimes, and it is certainly the most expensive. But is it effective? The answer to this question depends on what prison is supposed to achieve. The four aims that are usually given for imprisonment are deterrence, rehabilitation incapacitation, and retribution. Retribution is impossible to quantify and has therefore received little evaluative attention. But much research has been carried out on the deterrent, rehabilitative and incapacitating effectiveness of imprisonment.

As the Director of the University of Cambridge's Institute of Criminology puts it, "Every serious review of research on the deterrent effects of punishment has concluded that there is no evidence to support the belief that incremental changes or differences in punishments in individual cases, or in general, have measurable deterrent effects" (Tonry, 2004). A large-scale review of research on imprisonment carried out for the Canadian government backed up this view of deterrence. It also found that offenders who were imprisoned were no less likely to reoffend than those given community sentences, and that those given longer sentences were more likely to go back to crime (Gendreau, Goggin, & Cullen, 1999). So if increased imprisonment does not deter and does not rehabilitate, does it reduce crime by incapacitation?

A recent American economic study of the effects of the huge increase in the imprisonment of drug offenders found that there probably has been a small but significant resultant reduction in violent and property crime in the USA of between 1% and 3%. However, given the high cost of this extra imprisonment, the authors conclude that the increase was probably not cost-effective (Kuziemko & Levitt, 2004). Moreover, a study of crime and sentencing rates in the California, the State with the highest rates of imprisonment of drug offenders, showed that those counties which imprisoned the most drug offenders had *slower* decreases in serious crime rates (Macallair, Males, Rios, & Vargas, 2000).

This body of research often misses out a crucial element, which is the negative effect of imprisonment on inmates, their families and public budgets (Currie, 1998). Prison may incapacitate inmates from committing crimes, but it also may incapacitate them for employment once they leave prison. It creates thousands of one-parent (or no-parent) families and so contributes to the next generation of offenders. It drains money away from public services, such as health, education and family support, which can prevent crime in the long-term and are also vital for the well-being of the non-criminal majority. Overall, the available evidence suggests that there are ways of reducing crime that are less costly and more effective than increasing the imprisonment of drug offenders.

Treatment for drug dependence

The research on the effect of treatment on crime by drug dependent offenders is much more encouraging than the evidence on imprisonment. Studies have consistently found that participation in treatment leads to significant reductions in offending (Prendergast, Podus, Chang, & Urada, 2002), and that the economic benefits greatly outweigh the costs of treatment.

The most famous judgement of cost-benefit ratio comes from Rydell and Everingham's study of measures to control cocaine use, which found that treatment producd a return of over $7 dollars saved on each dollar spent on treatment (Rydell & Everingham, 1994).

More recent work in England has found an even greater ratio of between 9.5:1 and 18:1 (depending on assumptions used) of benefit to cost in the National Treatment Outcome Research Study (NTORS), with the vast majority of the benefit again coming in the form of reduced crime (Godfrey, Stewart, & Gossop, 2004). NTORS included both abstinence-based and methadone treatment, and both were found to be associated with reductions in crime. These findings have been echoed in other countries, including Australia, Canada, the Netherlands, Germany, Spain and Switzerland. Two of these countries have also experimented with using heroin-assisted treatment for heavily dependent users and found dramatic reductions in crime and increases in health and employment (Uchtenhagen, Gutzwiller, Dobler-Mikola, & Stephen, 1997; van den Brink, Hendriks, Blanken, Koeter, van Zwieten, & van Ree, 2003), and several countries are planning or running experimental trials of heroin-assisted treatment.

Given the wealth of evidence in this field, there is no question that treatment is the most effective method for reducing the offending of people who have severe drug problems. But troubling questions do remain over the potential for drug treatment to reduce crime.

For example, the quality and outcomes of drug treatment tend to vary widely, not between treatment types (which tend to have similar outcomes in general), but between treatment sites (Gossop, 2004). Some treatment agencies produce dramatically better results than others, and it is not yet clear why this is. It is especially difficult to provide successful treatment for people who use multiple drugs, such as people who enter treatment who are dependent on both heroin and crack, and for people who have problems with mental health as well as drug use. Another problem with suggesting drug treatment as a solution for drug-related crime is a question of scale. Positive impacts on crime that have been achieved in small-scale, closely monitored programmes are difficult to replicate across entire cities or countries. And treatment systems in most countries do not have the capacity to attract and treat all the problematic drug users who could use them. Many people who do enter treatment drop out, relapse and go back to crime. As a tertiary prevention measure, drug treatment does not prevent people getting into drug use and crime in the first place, but can shorten individual careers of crime and drug use. But greater reductions in overall crime would come from successful approaches at primary and secondary levels.

Court-mandated treatment

Knowledge of the beneficial effects of treatment, and the less certain and more costly effects of imprisonment has naturally lead to efforts to use treatment instead of imprisonment. And there have been some significant successes. The Drug Treatment Alternative to Prison Programme (DTAP) was set up in Brooklyn, New York City in 1990, and has since treated over 2,000 people who pleaded guilty to serious non-violent crimes and who would otherwise have gone to prison. Evaluation of their progress, compared to a matched sample who did go to prison, showed that those who participated in the programme were 33% less likely to be rearrested and 67% less likely to be

reincarcerated (National Center on Addiction and Substance Abuse, 2003).

The USA has also seen a large increase in the use of drug courts, which divert drug-related offenders into treatment. In 2004, there were over 1,200 drug courts in operation. It is less clear whether these courts offer a genuine alternative to imprisonment. Many limit eligibility to people who are charged with drug offences and who do not have significant criminal records. Some drug courts deal with a high proportion of users of marijuana. In other countries than the USA, these people would not be facing imprisonment. Doubts have also been expressed over the positive reported results of drug courts, as the research has been plagued by methodological problems and over-optimistic estimations of effect (Stevens, Berto, Heckmann, Kerschl, Oeuvray, van Ooyen et al., 2005). However, a recent report by the US General Accountability Office, using only methodologically rigorous studies, did find that there were positive results on recidivism during and after participation in the drug court programmes reviewed (General Accountability Office, 2005). These positive effects may be linked to the general phenomenon of the most rigorously evaluated programmes being those that are the best implemented and most effective (Lipsey, 2003). It is much harder to reproduce such positive effects over wide and lengthy programmes in everyday circumstances. However, there are renewed grounds for optimism that drug courts do reduce crime.

Drug courts are also being developed in Canada, Ireland and Australia, and their example was followed in the UK by the introduction of the Drug Treatment and Testing Order, or DTTO. This order, which ahs recently been superceded by the Drug Rehabilitation Requirement, provided for persistent drug dependent offenders to enter drug treatment as an alternative to some other sentence, usually imprisonment. So far, results seem to be disappointing, with low completion rates and high recidivism. Of the people sentenced to a DTTO in England in 2001, 86% were reconvicted within two years (Spicer & Glicksman, 2004). Scottish results were not so bleak, with a two-year reconviction rate of 66% (McIvor, 2004)[3]. It should be remembered that these figures refer to people who are highly persistent offenders when they come into treatment, and the DTTO represented a valuable opportunity for some of them to address their drug use and offending. However, these apparently poor results inevitably led to questions over the efficacy of DTTOs. There may also be unintended consequences of expanding treatment as an alternative to imprisonment which damage the prospects of success for people who enter treatment voluntarily. Volunteers may be crowded out of the treatment system, or find that court-ordered treatment harms the quality of their relationships with staff and peers in treatment (Hunt & Stevens, 2004). One key factor is the quality of treatment that is offered to offenders, which may be even more important in affecting retention and success than the route of referral into treatment (Millar, Donmall, & Jones, 2004).

Other countries, including Germany and the Netherlands, have also reported problems with using treatment as an alternative to imprisonment, although results from Switzerland have been more encouraging (Stevens, Berto, Heckmann et al., 2005). A six-country, European study of the effects of quasi-compulsory treatment for drug dependent offenders is currently under way and will provide more evidence on the use of alternatives to imprisonment[4]. In the meanwhile, they can be seen as a promising method for reducing drug-related crime, especially when used as a genuine alternative and not to widen the net of the criminal justice system.

Drug testing

The increase in the use of drug testing in the general American population has inevitably been reflected in its treatment of offenders. Drug testing is a major component of drug court programmes, and was introduced for offenders pre-trial, in prison, on probation and parole during the administration of the first President Bush. The British government has followed this approach, introducing mandatory drug testing in prisons, testing on charge, drug abstinence orders, drug abstinence requirements and, more recently, drug testing as a condition of parole. Drug tests are also administered to prisoners and parolees in Australia and Canada.

Drug testing may be a component of successful drug treatment programmes. But it is also claimed that drug testing, even without providing treatment, can deter and identify drug use, thereby enabling sanctions to be imposed, or treatment to be offered, leading to more abstinence and less crime. This is the basis for statements such as, "the testing-and-sanctions idea is the only single proposal with the potential to reduce drug-related crime swiftly and dramatically" (Boyum & Kleiman, 2003). Unfortunately, where testing and sanctions have been tried, the results have not been as swift and dramatic as intended.

Early experiments in Maryland found that testing defendants before they came to trial did not deter them from crime (although this may have been due to implementation difficulties, such as delays in responding to drug test results) (Goldkamp & Jones, 1992). And research on a programme of intensive supervision and drug testing for parolees found that it did not reduce offending, but did increase the number of people returned to prison (Turner, Petersilia, & Deschenes, 1992). A randomised study of drug testing of young Californian parolees found that those who were tested more frequently were *more* likely to reoffend, and that this was not attributable to implementation difficulties (Haapanen, Boyken, Henderson, & Britton, 1998).

A similar lack of evidence of the effectiveness of drug testing without treatment has not deterred its expansion in England. The Home Office commissioned research on the introduction of on-charge drug testing, drug abstinence orders and drug abstinence requirements. The researchers found no significant impact of drug testing on drug use or offending (Matrix Research and Consultancy & NACRO, 2004).

The continued lack of evidence of effectiveness of drug testing of offenders suggests that expansion is likely only to increase the profits of drug testing companies. There are also potential negative effects. For example, an incentive to switch to more harmful drugs can come from the difference in the lengths of time that drug use is detectable (cannabis is detectable for longer than heroin and cocaine use). More fundamentally, the suggested mechanism by which drug testing alone is supposed to reduce crime appears not to work in practice. Rather, it seems that more drug testing may increase the costs of the criminal justice system through increased spending on drug testing and imprisonment, without producing commensurate benefits in crime reduction.

[3] The Scottish DTTO is different to the English. It shares more characteristics with the US drug court model and filters out many unmotivated offenders before they enter treatment.

[4] See http://www.kent.ac.uk/eiss/projects/qct-europe/

Summary of evidence

This review of the methods that are used to reduce drug-related crime is brief and omits many of the complex debates that surround this subject. Nevertheless, we believe that it is useful to summarise the available evidence on such initiatives. We can do this by placing them in categories according to how likely they are, in the light of the current global evidence-base, to be cost-effective.

In the first category are those initiatives that have been proven to be cost-effective in reducing drug-related crime. Into this category we place situational crime prevention, support for children and families in low income areas and general treatment programmes for people with severe problems of drug dependence.

The next category is for programmes that are promising in reducing drug-related crime, but are not yet proven to produce benefits that are greater than their costs. This category contains initiatives to improve socio-economic conditions in order to reduce vulnerability to drugs and crime, efforts to suppress the activities of organised crime and treatment as an alternative to imprisonment for drug-related offenders.

The final category is for methods for which the evidence suggests that costs are greater than benefits. This includes the rigid enforcement of drug laws, most drug prevention education programmes, large-scale imprisonment of drug related offenders and the use of drug testing to deter crime.

Table 2: Summary of available evidence on measures to reduce drug-related crime

Level of prevention	Cost-effective	Promising	Probably not cost-effective
Primary	Situational crime prevention	Poverty reduction	Drug law enforcement
Secondary	Support to families and children	Some school-based education initiatives Suppression of organised crime	Most drug education programmes
Tertiary	Drug treatment	Alternatives to imprisonment	Large-scale imprisonment Drug testing

We should also mention the debate over the effects on crime of prohibition itself. It is argued that prohibition leads to more economic-compulsive and systemic crime by forcing up the price of drugs and leaving distribution in the hands of violent criminals (Rolles, Kushlick, & Jay, 2004). Others emphasise the psycho-pharmacological argument and argue that liberalising the drug trade would increase use and therefore crime through decreased inhibitions and greater psychosis (Inciardi, 1999). Initial evidence comparing Amsterdam and San Francisco suggests that greater liberalisation does not necessarily lead to increased drug use (Reinarman, Cohen, & Kaal, 2004), but the socio-economics of these two cities are different and caution should be applied to direct comparisons of the effects of drug laws where different levels of poverty and unemployment exist. At the moment, international conventions forbid alternative methods of drug market regulation and so hamper efforts to create evidence on the relative effects on crime of prohibition and liberalisation. We recommend close observation of the effects of drug law changes and that consideration is given to carrying out experiments with alternative regulatory frameworks for drug distribution.

Even without such experiments, there are proven methods available to policy makers at each level of the public health model; primary, secondary and tertiary. Those with the largest scope for reducing crime tend not to be drug policies, but wider social and crime preventive policies. Increasing the scale and quality of such programmes would go some way to creating a comprehensive and effective response to the problem of drug-related crime.

CONCLUSION

While acknowledging the fact that the current global evidence base in this area is limited and constantly improving, and that any policy conclusions that we make must therefore be tentative, we do consider that our key findings here do present a dilemma for policymakers. Consistent with the conclusions of the recent Beckley Foundation Report into Supply Reduction, we find that the primary approach employed by governments (and the one that has received by far the most resources and political attention) has had very little impact on the overall level of drug related crime. This is for two basic reasons - first, that the criminal profit motive ensures that, as soon as one organisation or network is removed from the trafficking chain, others quickly move in to fill the gap. Secondly, the demand for drugs is not reduced, so some individuals with dependencies to maintain will continue to steal as long as their chosen drug is available for purchase. Ironically, where the enforcement agencies are successful in limiting the supply of a particular drug in a particular area, the evidence suggests that users may simply steal more to pay the higher prices.

Our conclusions are not all gloomy. There is much that municipal authorities and governments can do to reduce drug-related crime. Attempts to minimise the poverty and social exclusion that seems to drive both petty offending and chaotic drug use seem to have an impact, as do general approaches to situational crime prevention. Furthermore, involving the most prolific petty and drug addicted offenders in treatment (which can be done as part of, or as an alternative to, criminal justice sanctions), has the potential to reduce drug related crime, but only where the procedures are tightly drawn, and the treatment provided is of consistently high quality. Governments should give consideration to developing policies and programmes in these areas, but will also need to seriously review the assumption that tough enforcement action against traffickers and users is the best way to reduce drug related crime.

REFERENCES

Amen, D.G., Yantis, S., Trudeau, J., Stubblefield, M.S., & Halverstadt, J.S. (1997). Visualising the firestorms of the brain: an inside look at the clinical and physiological connections between drugs and violence using brain SPECT imaging. *Journal of Psychoactive Drugs*, 29(4), 307-319.

Armitage, R. (2000). An Evaluation of Secured by Design Housing within West Yorkshire. Briefing note 7/00. London: Home Office.

Arrestee Drug Abuse Monitoring Program (2002). Drug Use and Related Matters Among Adult Arrestees, 2001. http://www.adam-nij.net/files/adam2001.PDF: Arrestee Drug Abuse Monitoring Program.

Ball, J.C., Rosen, L., Flueck, J.A., & Nurco, D.N. (1981). The criminality of heroin addicts: When addicted and when off opiates. In J.A. Inciardi (Ed.), *The Drugs-Crime Connection* (pp. 39-65). Beverley Hills: Sage.

Baron, S.W. (1999). Street youths and substance use - the role of background, street lifestyle and economic factors. *Youth and Society*, 31(1), 3-26.

Bowling, B. (1999). The Rise and Fall of New York Murder: Zero Tolerance or Crack's Decline? *British Journal of Criminology*, 39(4), 531-554.

Boyum, D., & Kleiman, M.A.R. (2003). Breaking the drug-crime link. *Public Interest*(152), 19-38.

Bratton, W. (1998). Crime is Down in New York City: Blame the Police. In N. Dennis (Ed.), *Zero Tolerance: Policing a Free Society. Choice in Welfare No. 35, Second edition.* London: The IEA Health and Welfare Unit.

Brotherton, D.C. (2004). What happened to the pathological gang: Notes from a case study of the Latin Kings and Queens in New York. In J. Ferrell,K. Hayward,W. Morrison, & M. Presdee (Eds.), *Cultural Criminology Unleashed.* London: Glasshouse Press.

Buchanan, J., & Young, L. (2000). The War on Drugs - a war on drug users? *Drugs: Education, Prevention and Policy*, 7(4), 409-422.

Burr, A. (1987). Chasing the Dragon: Heroin Misuse, Dependency and Crime in the Context of South London Culture. *The British Journal of Criminology*, 27(4), 333-357.

Bush, W., Roberts, M., & Trace, M. (2004). Upheavals in the Australian drug market: heroin drought, stimulant flood. London: DrugScope and the Beckley Foundation.

Byqvist, S., & Olsson, B. (1998). Male drug abuse, criminality and subcultural affiliation in a career perspective. *Journal of Psychoactive Drugs*, 30(1), 53-68.

Chenery, S., & Deakin, E. (2003). Review of 'The Tower Project'. Huddersfield: Lancashire Police Constabulary, Western Division.

Chouvy, P.-A. (2005). The dangers of opium eradication in Asia. *Jane's Intelligence Review.*

Commons Hansard Debates (2004). 18th October 2004, Column 690. London: The Stationery Office.

Cuijpers, P. (2003). Three decades of drug prevention research. *Drugs-Education Prevention and Policy*, 10(1), 7-20.

Currie, E. (1998). *Crime and punishment in America* New York: Metropolitan Books

da Agra, C. (2002). The complex structures, processes and meanings of the drug/crime relationship. In S. Brochu,C. da Agra, & M.-M. Cousineau (Eds.), *Drugs and Crime Deviant Pathways.* Aldershot: Ashgate.

Davis, M. (1990). *City of Quartz: Excavating the Future of Los Angeles* London: Verso

Deitch, D., Koutsenok, I., & Ruiz, A. (2000). The relationship between crime and drugs: What we have learned in recent decades. *Journal of Psychoactive Drugs*, 32(4), 391-397.

Donnelly, N., Weatherburn, D., & Chilvers, M. (2004). The impact of the Australian heroin shortage on robbery in New South Wales. Issue paper no. 22: NSW Bureau of Crime Statistics and Research.

Edmunds, M., May, T., Hearnden, I., & Hough, M. (1998). Arrest Referral: Emerging Lessons from Research, *Drugs Initiative Paper 23.* London: Home Office.

EMCDDA (2004). Statistical Bulletin 2004. Lisbon: EMCDDA.

Farabee, D., Joshi, V., & Anglin, M.D. (2001). Addiction careers and criminal specialization. *Crime & Delinquency*, 47(2), 196-220.

Fischer, B., Medved, W., Kirst, M., Rehm, J., & Gliksman, L. (2001). Illicit opiates and crime: Results of an untreated user cohort study in Toronto. *Canadian Journal of Criminology*, 43(2), 197-217.

Geary, W.R. (2002). The legislative recreation of RICO: Reinforcing the "myth" of organized crime. *Crime, Law and Social Change*, 38(4), 311-356.

Gendreau, P., Goggin, C., & Cullen, F.T. (1999). The Effects of Prison Sentences on Recidivism. Ottawa: Solicitor General Canada.

General Accountability Office (2005). Adult Drug Courts: Evidence Indicates Recidivism Reductions and Mixed Results for Other Outcomes. GAO-05-219. Washington, DC: General Accountability Office.

General Accounting Office (2003). Youth Illicit Drug Use Prevention: DARE Long-Term Evaluations and Federal Efforts to Identify Effective Programs. GAO-03-172R. Washington, DC: General Accounting Office.

Gill, M., & Spriggs, A. (2005). Assessing the impact of CCTV. Home Office Research Study 292. London: Home Office.

Godfrey, C., Stewart, D., & Gossop, M. (2004). Economic analysis of costs and consequences of the treatment of drug misuse: 2-year outcome data from the National Treatment Outcome Research Study (NTORS). *Addiction*, 99(6).

Goldkamp, J.S., & Jones, P.R. (1992). Pretrial Drug-Testing Experiments in Milwaukee and Prince- Georges-County - the Context of Implementation. *Journal of Research in Crime and Delinquency*, 29(4), 430-465.

Goldstein, P. (1985). The drugs-violence nexus; a tripartite framework. *Journal of Drug Issues*(Fall), 493-506.

Gossop, M. (2004). Treatment: what works and why, *NTA National Conference.* London.

Gottfredson, G.D., Gottfredson, D.C., & Czeh, E.R. (2000). National Study of Delinquency Prevention In Schools. Maryland: Gottfredson Associates Inc.

Haapanen, R., Boyken, G., Henderson, S., & Britton, L. (1998). Drug Testing for Youthful Offenders on Parole: An Experimental Study. August 1998. Sacramento: State of California Department of the Youth Authority

Research Division.

Harrell, A.V., Cavanagh, S.E., Harmon, M.A., Koper, C.S., & Sridharan, S. (1997). *Impact of the Children at Risk Program: Comprehensive Final Report* Washington, DC: The Urban Institute

Harrison, L., & Gfroerer, J. (1992). The intersection of drug use and criminal behavior: Results from the National Household Survey on Drug Abuse. *Crime and Delinquency*, 38, 422-443.

Hawthorne, G. (2001). Drug education:myth and reality. *Drug and Alcohol Review*, 20, 111-119.

Hoaken, P.N.S., & Stewart, S.H. (2003). Drugs of abuse and the elicitation of human aggressive behavior. *Addictive Behaviors*, 28(9), 1533-1554.

Hough, M. (2002). Drug user treatment within a criminal justice context. *Substance Use & Misuse*, 37(8-10), 985-996.

Hunt, N., & Stevens, A. (2004). Whose harm? Harm and the shift from health to coercion in UK drug policy. *Social Policy & Society*, 3(4), 333-342.

Inciardi, J.A. (1999). Legalizing drugs: would it really reduce violent crime? In J.A. Inciardi (Ed.), *The Drug Legalization Debate, Second Edition.* Thousand Oaks: Sage.

Jacobs, J.B., Friel, C., & Radick, R. (1999). *Gotham Unbound: How New York City was Liberated from the Grip of Organized Crime* New York: New York University Press

James, O. (1995). *Juvenile Violence in a Winner-Loser Culture: Socio-Economic and Familial Origins of the Rise in Violence against the Person* London: Free Association Books

Kruezer, A., Roemer-Klees, R., & Schneider, H. (1991). *Beschaffungskriminalitaet Drogenabhaengiger* Wiesbaden: BKA

Kuure, T. (2002). Literature review - Finland. In A. Stevens, & B. Gladstone (Eds.), *Learning, not offending: Effective interventions to tackle youth transition to crime in Europe.* Brasted,: RPS Rainer.

Kuziemko, Y., & Levitt, S.D. (2004). An empirical analysis of imprisoning drug offenders. *Journal of Public Economics*, 88(9-10), 2043-2066.

Lab, J.P. (1992). *Crime Prevention: Approaches, practices and evaluations* Cincinnati: Anderson

Lavine, R. (1997). The psychopharmcological treatment of aggression and violence in the substance using population. *Journal of Psychoactive Drugs*, 29(4), 321-329.

Lipsey, M.W. (2003). Those confounded moderators in meta-analysis: good, bad and ugly. *Annals of the American Academy*, 587, 69-81.

Macallair, D., Males, M., Rios, C., & Vargas, D. (2000). Drug Use and Justice: An Examination of California Drug Policy Enforcement. San Francisco, CA: Centre on Juvenile and Criminal Justice.

Martin, S.E., Maxwell, C.D., White, H.R., & Zhang, Y. (2004). Trends in alcohol use, cocaine use, and crime: 1989-1998. *Journal of Drug Issues*, 34(2), 333-359.

Matrix Research and Consultancy, & NACRO (2004). Evaluation of drug testing in the

criminal justice system. Home Office Research Study 286. London: Home Office Research, Development and Statistics Directorate.

Matthews, R., & Trickey, J. (1996). *Drugs and Crime: A Study Amongst Young People in Leicester* Leicester: University of Leicester

McBride, D.C., & McCoy, C.B. (1993). The drugs-crime relationship: An analytical framework. *The Prison Journal*, 73, 257-278.

McIvor, G. (2004). Reconviction following drug treatment and testing orders. Edinburgh: Scottish Executive.

McSweeney, T., & Hough, M. (2005 in press). Drugs and alcohol. In N. Tilley (Ed.), *A Handbook for Crime Prevention: Theory, Policy and Practice.* Cullompton: Willan Publishing.

Millar, T., Donmall, M., & Jones, A. (2004). Treatment effectiveness: demonstration analysis of treatment surveillance data about treatment completion and retention. London: National Treatment Agency for Substance Misuse.

National Center on Addiction and Substance Abuse (2003). Crossing the Bridge: An Evaluation of the Drug Treatment Alternative-to-Prison (DTAP) Program. A CASA White Paper. New York: National Center on Addiction and Substance Abuse, Columbia University.

National Crime Prevention (1999). Pathways to Prevention: Developmental and Early Intervention Approaches to Crime in Australia. Canberra: National Crime Prevention, Attorney-General's Department.

Newman, O. (1972). *Defensible Space: Crime Prevention through Urban Design* London: Architectural Press

Nurco, D.W. (1987). Drug addiction and crime: A complicated issue. *British Journal of Addictions*, 82, 7-9.

Parker, H., & Newcombe, R. (1987). Heroin use and acquisitive crime in an English community. *British Journal of Sociology*, 38, 331 - 350.
Parker, H., & Bottomley, T. (1996). Crack cocaine and drugs-crime careers. London: Home Office.
Parker, H. (2004). The new drugs interventions industry: What outcomes can drugs/criminal justice treatment programmes realistically deliver? *Probation Journal*, 51(4), 379-386.
Pease, K. (2002). Crime reduction. In M. Maguire,R. Morgan, & R. Reiner (Eds.), *The Oxford Handbook of Criminology.* Oxford: Oxford University Press.
Pernanen, K., Cousineau, M.-M., Brochu, S., & Sun, F. (2002). Proportions of Crimes Associated with Alcohol and Other Drugs in Canada. Ottawa: Canadian Centre of Substance Abuse.
Prendergast, M.L., Podus, D., Chang, E., & Urada, D. (2002). The effectiveness of drug abuse treatment: a meta-analysis of comparison group studies. *Drug and Alcohol Dependence*, 67(1), 53-72.
Prinz, R.J. (2002). The Fast Track project: A seminal intervention efficacy trial (Commentary). *Journal of Abnormal Child Psychology*, 30(61-64).
Pudney, S. (2002). *The road to ruin? Sequences of initiation into drug use and offending by young people in Britain* London: Home Office
Rees, J. (2005). City cameras don't cut crime - but they do save lives, *Western Mail.* Cardiff.
Reinarman, C., & Levine, H. (1997). Crack in America: Demon Drugs and Social Justice. Berkeley: University of California Press.
Reinarman, C., Cohen, P.D.A., & Kaal, H.L. (2004). The Limited Relevance of Drug Policy: Cannabis in Amsterdam and San Francisco. *American Journal of Public Health*, 94.
Reuter, P., & Boyum, D. (2005). *An analytic assessment of US drug policu* Washington, DC: The AEI Press
Rolles, S., Kushlick, D., & Jay, M. (2004). After the war on drugs: Options for control. London: Transform Drug Policy Foundation.
Rydell, C.P., & Everingham, S.S. (1994). Controlling Cocaine: Supply Versus Demand Programs. Santa Monica: RAND.
Sarnecki, J. (1985). *Predicting Social Maladjustment* Stockholm: The National Council for Crime Prevention
Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (In press). Lifetime effects: The High/Scope Perry Preschool study through age 40. (Monographs of the High/Scope Educational Research Foundation, 14). Ypsilanti, MI: High/Scope Press.
Seddon, T. (2000). Explaining the drug-crime link: theoretical, policy and research issues. *Journal of Social Policy*, 29(1), 95-107.
Shepard, E.M., & Blackley, P.R. (2005). Drug Enforcement and Crime: Recent Evidence from New York State. *Social Science Quarterly*, 86(2), 323-343.
Sinha, R., & Easton, C. (1999). Substance abuse and criminality. *Journal of the American Academy of Psychiatry and the Law*, 27(4), 513-526.
Spicer, K., & Glicksman, A. (2004). Adult reconviction: results from the 2001 cohort. Home Office Online Report 59/04. London: Home Office.
Stevens, A., Berto, D., Heckmann, W., Kerschl, V., Oeuvray, K., van Ooyen, M., Steffan, E., & Uchtenhagen, A. (2005). Quasi-Compulsory Treatment Of Drug Dependent Offenders: An International Literature Review. *Substance Use & Misuse*, 40, 269-283.
Taylor, B. (2002). I-ADAM in Eight Countries: Approaches and Challenges. Washington, DC: U.S. Department of Justice Office of Justice Programs.
The John Howard Society of Alberta (1995). Crime Prevention Through Social Development: A Resource Guide. Edmonton: Wild Rose Foundation.
The National Evaluation of Sure Start (2004). The Impact of Sure Start Local Programmes on Child Development and Family Functioning. A Report on Preliminary Findings. London: Institute for the Study of Children, Families and Social
Issues, Birkbeck University of London.
Tilley, N., & Laycock, G. (2002). Working Out What to Do: Evidence-based Crime Reduction Crime Reduction Series Paper 11. London: Home Office.
Tolan, P.H. (2004). Violence Prevention: SAFE Children, *Societies of Criminology 1st Key Issues Conference.* Paris.
Tonry, M. (2004). *Punishment and politics: Evidence and emulation in the making of English crime control policy* Cullompton: Willan Publishing
Transnational Institute (2003). Measuring Progress: Global Supply of Illicit Drugs.
TNI Drug Policy Briefing 6. Amsterdam: Transnational Institute.
Tremblay, R. (2004). Violence Prevention: The Montreal Longitudinal and Experimental Study, *Societies of Criminology 1st Key Issues Conference.* Paris.
Turner, S., Petersilia, J., & Deschenes, E.P. (1992). Evaluating Intensive Supervision Probation Parole (Isp) for Drug Offenders. *Crime & Delinquency*, 38(4), 539-556.
Uchtenhagen, A., Gutzwiller, F., Dobler-Mikola, A., & Stephen, T. (1997). Programme for a medical prescription of narcotics: a synthesis of results. *European Addiction Research*, 3(4), 160-163.
United Nations International Drug Control Programme (1997). World Drug Report. Oxford: Oxford University Press.
University of the West of England (2002). Southmead - Is it getting better? An evaluation of Community Safety Initiatives. Final Report. Bristol: University of the West of England.
van den Brink, W., Hendriks, V.M., Blanken, P., Koeter, M.W., van Zwieten, B.J., & van Ree, J.M. (2003). Medical prescription of heroin to treatment resistant heroin addicts: two randomised controlled trials. *British Medical Journal*, 327(7410), 310.
Van Kesteren, J.N., Mayhew, P., & Nieuwbeerta, P. (2000). Criminal Victimisation in Seventeen Industrialised Countries: Key-findings from the 2000 International Crime Victims Survey. The Hague: Ministry of Justice, WODC.
Wacquant, L. (1999). *Les Prisons de la Misère* Paris: Editions Raison d'Agir
Weatherburn, D., & Lind, B. (2001). *Delinquent-Prone Communities* Cambridge: Cambridge University Press
Welsh, B.C., & Farrington, D.P. (2002). Crime prevention effects of closed circuit television: a systematic review. Home Office Research Study 252. London: Home Office.
Wilkinson, R.G. (1996). *Unhealthy Societies; The Afflictions of Inequality* London: Routledge
Young, J. (2004). Voodoo criminology and the numbers game. In J. Ferrell,K. Hayward,W. Morrison, & M. Presdee (Eds.), *Cultural Criminology Unleashed.* London: Glasshouse Press.