GLOBAL DRUG POLICY
2005

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PREFACE

Evidence suggests that mankind has used psychoactive substances since pre-history, and that these may have played a significant role in the evolution of human culture. We are now facing a world with unprecedented levels and choices of psychoactive agents, used to modify perception, sensation, mood and behaviour. The numerous psychotropic agents available in the modern world include recreational substances such as tobacco and alcohol, and psychedelic substances, some of which have been used for millennia by traditional societies for healing and spiritual purposes. Furthermore, the past 50 years has seen an explosion of scientific knowledge of brain function, including neurochemistry, and this has been paralleled by the development of pharmaceutical agents to treat neurological and psychiatric disorders. The 21st century is already being hailed as the century of neuroscience.

Worldwide, psychoactive substance use among the public is becoming more complex, with the increased availability of pharmaceuticals, recreational drugs, and herbal psychotropics, while knowledge of the action and effects of such substances is increasingly sophisticated. Nowadays, the boundaries between different types of drug, and of usage - such as recreational, therapeutic or enhancing - are becoming increasingly blurred. The development of new agents will undoubtedly continue to occur, as will new combinations of drugs with novel effects, some of which may cause new problems.

Use of such substances undoubtedly does and will impact on the well-being of both individuals and societies, and it is vital to bring scientific evidence to bear to alleviate associated adverse consequences, such as toxicity, dependency and crime. In general, the approaches that have been taken over the last 30-40 years to control the use of non-prescription drugs, to classify and to regulate them, have not been successful. Moreover, pharmaceutical agents, including putative cognition enhancers, are now widely available to the public via the internet, in some cases bypassing healthcare systems.

In regard to the management of recreational drug use, the impact of law enforcement, and of other measures to reduce supply, remain uncertain. There is little evidence that supply-side measures are containing the level of harmful drug use. It seems imperative, therefore, to explore the potential efficacy of improved regulatory measures that would lie between prohibition and legalisation. Changes in the criminal justice system, such as drug courts, seem likely to be more helpful than mass incarceration. Other approaches that minimise the harms associated with some recreational drug usage, such as needle exchange, are evidence-based, and thus it is important that ideology does not stand in the way of implementation of proven harm-reduction measures.

Illegal drug production is a key issue affecting a small number of underdeveloped countries, and global policies for the control of substances such as coca and opium have enormous impact upon civic culture and stability in these nations. The increase in crime brought about by legal drugs, such as alcohol, as well as by illegal drugs, is increasingly being recognised throughout the world, and rational responses are needed to tackle this substantial public-health and social problem. In order to guide policy, it is important that

an understanding is developed both of the total harms caused by particular drugs to individuals and society, and also of the subjective benefits and other reasons why people take particular substances. A distinction needs to be drawn between responsible *use* of substances, and their imprudent *misuse;* and the factors which cause a small percentage of individuals to misuse, with major adverse consequences for public order, need to be elucidated.

There is growing anecdotal evidence that some drugs that are currently illegal may have beneficial therapeutic uses in the treatment of a range of medical conditions. However, international drug control systems restrict research into the potential benefits of these substances, in particular cannabis and psychedelic agents. These latter substances may also have an important role to play in the investigation of cognitive and sensory processing, and of other aspects of human consciousness.

Advances in the science of learning and memory are already revealing the potential for enhancement of faculties in healthy individuals. If drugs for enhancement of various aspects of consciousness become a mainstream reality, it would be helpful to anticipate and debate various aspects of their usage. How will or should such agents be sanctioned, regulated and accessed? If only those individuals who can afford to pay for these agents can access them, will this further exacerbate socio-economic divisions within societies and throughout the world? Will such drug usage increase competitiveness in an already competitive society? Could a pill that enhances compassion undermine our respect for such a characteristic?

In attempting to address these issues, the Beckley Foundation continues to emphasise the importance of rationality in any discussion. As Professor Colin Blakemore, Chief Executive of the Medical Research Council, pointed out, in order to move the debate on and to make useful recommendations for the future, we need to detach ourselves from ideological considerations and to look dispassionately at the factual evidence. Only by attaining a rational overview of these complex issues can we ensure that the right decisions for the future will be taken. Such a scientific debate will help us to reconsider how psychoactive substances can best be managed to minimise their harms, while respecting individual freedoms to make choices that do not harm others.

Amanda Neidpath

Beckley Foundation
Global Drug Policy Seminar 2005

Day One

Monday 21 November 2005

EXECUTIVE SUMMARY

Throughout recent years drug use and drug markets have continued to expand, along with the social, crime, and health problems that are associated with drug misuse. Against this background, the aim of the seminar was to bring together experts from a range of different fields to consider how to manage 'a world awash with psychoactive substances'. A key issue raised during the seminar was the unreliability of international data on drug production and misuse, specifically involving figures from the United Nations Office on Drugs and Crime (UNODC).

The morning session explored key aspects of how to manage problems associated with drug use, in particular drug supply, drug-related crime, and the health impact of drugs. A key consideration was the impact of supply-side measures, and particularly law enforcement, on drug use and drug markets, and how these initiatives affect producer countries. *Marcus Roberts* noted that a zero-tolerance approach has failed to reduce drug use and drug markets, but there is some evidence that it can contain their expansion. Currently, examples of successful supply reduction are uncommon and tend to be short-lived, while the overall impact of law enforcement remains unclear. The most effective initiatives have occurred where governments have adopted draconian policies that would be unacceptable in more liberal states. Notably, the drug policy debate has become excessively polarised between options such as legalisation versus prohibition. In reality, the situation is more complex, with a range of possibilities to tackle the supply and demand sides of drug use.

Dr Francisco Thoumi pointed out that production of the main prohibited drugs is concentrated in a small number of developing countries. Production in these regions, such as Latin America, gives a competitive advantage to countries with a high level of illegality, and further erodes civic culture and political stability. For example, the prohibition of coca has been highly divisive in Latin America, because of its symbolic importance for Indian identity and culture. *Dr Thoumi* recommended that the UN remove coca from Schedule One and take steps to oversee legal production since this could have additional benefits of reducing social divisions in these countries.

Alex Stevens and *Prof Mark Kleiman* noted that the issue of crime reduction is central to contemporary drug policy, particularly that related to key drugs of dependence. However, *Prof Kleiman* made the often-overlooked point that alcohol is the drug most associated with crime. It is therefore important to take account of the way that illicit drugs interact with alcohol. Moreover, treatment for dependent drug users is the most cost-effective measure in reduction of harms associated with drug use, including crime. Other effective measures are 'situational crime prevention' and early interventions for vulnerable families. Evidence suggests that some measures adopted internationally are not effective in reducing drug-related crime - specifically, some forms of drug law enforcement, most forms of drug education, the mass imprisonment of drug users, and drug testing without treatment. Specialised drug courts able to issue rehabilitation orders that include drug treatment or enforced abstinence are considered more helpful than mass incarceration. Diversion of drug offenders from the criminal justice and prison systems appears to have a positive impact on recidivism; at least this is the experience of drug courts in the US. Flagrant drug markets are the main cause of crime and nuisance,

and there is evidence from the US that they can be successfully closed down by law enforcement initiatives. *Prof Gerry Stimson* and *Dr Anandya Chatterjee* then explored the role of harm-reduction initiatives in reducing drug-related harm to health, and in particular the impact on HIV/AIDS.

The afternoon session explored the impact that international drug control systems are having on research into the potential benefits of illicit psychoactive substances. *Prof Colin Blakemore*, the chair of this session, stated that it was important to share international expertise and experience on the therapeutic potential of illicit drugs, since drug policy should be informed by an understanding of toxicology and the effects of psychoactive substances on the human brain. In addition, there is growing evidence that drugs that are currently illegal can have beneficial therapeutic uses in the treatment of a range of medical conditions.

Prof Leslie Iversen discussed the various potential medical uses of cannabis, in the treatment of nausea, loss of appetite and pain control, including the treatment of neuropathic pain, a condition with few viable treatment options at present. These effects are thought to be based on actions via the endogenous cannabinoid system, which has been discovered fairly recently in the human body, creating new possibilities for medical advances through the manipulation of this system - for example, in the treatment of obesity. A product containing the main active ingredient in cannabis (THC) is available in the US, and the Canadian government has approved a cannabis product for the treatment of Multiple Sclerosis.

The effects of medical regulation of cannabis were discussed by *Rob Kampia*. He cited a report, published by the Institute of Medicine and commissioned by the White House, that found some evidence for the therapeutic usefulness of marijuana. The government has issued research guidelines, but will not expand medical use without further research. However, concurrently the government has made it almost impossible to conduct research, and it is now more difficult to study marijuana than any other drug in the US. Despite this, there has been progress at the state and local level, with medical use of marijuana legalised in ten states, although its use by patients is still prohibited by federal law.

In the realm of research into psychedelics (or hallucinogens), *Prof. Dave Nichols* pointed out that there has been little research done in the past 35 years, yet before laws passed against their use, such substances were being hailed as important therapeutic tools in psychiatry. More recently, research suggests that psychedelics may be effective for the treatment of mental health disorders, particularly those refractory to common treatments, such as obsessive-compulsive disorder and eating disorders. Moreover, psychedelics could have a role in drug and alcohol treatment, and there is a growing body of evidence to show that psychedelics may be highly effective in the treatment of pain and depression among terminally ill patients. Another interesting aspect of research into psychedelics is the potential for their use in the exploration of cognitive and sensory processing, and also the effects of such substances on other aspects of human consciousness, such as spirituality and creativity.

Finally, *Dr John Marsden* looked at the recent emergence of 'smart drugs', which could transform attitudes to drugs and patterns of consumption. New 'top down' drugs have been developed by pharmaceutical companies to treat cognitive impairment, and have been subject to rigorous testing. However, there is evidence that some 'smart drugs' can have negative side effects - for example, increased sensitivity to pain - and that they may be used in dependent and pathological ways. There is also evidence to suggest that other 'smart drugs' can be effective tools in the treatment of substance misuse.

In summing up, *Prof Blakemore's* sentiments wholly reflected the Beckley Foundation's view that the methods used over the last 30-40 years to try to control the use of non-prescription drugs have, in general, not been successful. This is reflected in the falling price and increased potency and availability of street drugs. Furthermore, the proportion of the population that uses street drugs has increased, as has the use of other substances, including 'smart' drugs, most often accessed via the internet. It thus makes sense to re-assess current policy. To inform such a re-assessment, good evidence is required on the present situation and on the likely impact of initiatives to improve it. However, the principal factor is the importance of rationality in any discussion since globally there are key indicators that political ideology is inhibiting evidence-based decision-making on these issues. As P*rof Blakemore* concludes, if we are to move the debate on and to make recommendations for the future that make sense, then we need to detach ourselves from ideological considerations and to look rationally at the factual evidence.

Amanda Neidpath

Synopses of Presentations

Morning Session

Reduction of Drug Related Problems

Chaired by Dame Ruth Runciman

INTRODUCTION

'If we are to grapple with what is perhaps the most complicated area of all in contemporary social policy, it is important that professionals and policy makers constantly review the evidence for the effectiveness of their policies and programmes'.
Dame Ruth Runciman

'Our starting point is that this is a very complex issue with no simple solutions. The Beckley view is that the best way to get under those complexities is to give people the space to debate them, out of the media spotlight and without the pressures of having to agree an official political position'.
Mike Trace

Amanda Neidpath welcomed delegates from five continents and over thirty countries to the fifth annual seminar organised by the Beckley Foundation in the series *Society and Drugs: A Rational Perspective*. She observed that there is much evidence that the War on Drugs has failed by its own criteria – drug use and drug markets continue to expand, as do the crime and health hazards associated with misuse and addiction. Against this background, the aim of the seminar was to bring together experts from a wide range of fields, to consider how best to manage 'a world awash with psychoactive substances'. Lady Neidpath argued that the desire to alter consciousness is an innate human drive, and thus attention needs to be directed towards the minimisation of associated harms, while respecting the individual's right to make choices that do not harm others.

Dame Ruth Runciman, who chaired the morning session, noted that the Beckley Foundation Drug Policy Programme (BFDPP) was the first global initiative driven by the non-governmental sector that recognised the centrality of analysis of the evidence base to drafting effective drug policy development. On a personal note, she reflected on her experience of 20 years as a member of the UK's Advisory Council on the Misuse of Drugs, in which capacity she had been involved in reports on AIDS and drug misuse in the 1980s, drug misusers and the criminal justice system in the 1990s, and drug laws and their enforcement in 2000. The work leading to all these reports faced a common problem: the frailty of the evidence, its dispersed nature, and the lack of analysis to bring together what was known. She concluded that, for all the deficits and problems of the current position, there was now movement beyond what she described as the "blank sheet position", adding that this owed much to the work of many of the international experts attending the seminar, and to initiatives, such as those of the Beckley Foundation, that were working to bring the evidence together.

Mike Trace, co-director of the BFDPP, stated that its primary aim was to create a space for discussion and analysis of drug policy. Its first activity had been to commission a series of reports and briefings that provided an overview and analysis of drug policy effectiveness around the world. The BFDPP's role was primarily to synthesise the available evidence and to present it in a clear and accessible way. Its primary function was not to provide answers and draw conclusions, but to inform and facilitate the debate on drug policy options, which could reach beyond a small group of experts and engage politicians, opinion formers, and a wider public.

LAW ENFORCEMENT AND SUPPLY REDUCTION

DR. MARCUS ROBERTS

HEAD OF THE POLICY AND PARLIAMENTARY UNIT AT MIND. HE WAS FORMERLY HEAD OF POLICY AT DRUGSCOPE

'It is not helpful to view drug policy options in terms of polar opposites or mutual exclusivity. There are many potential policy configurations that combine supply-side and demand-reduction measures in different ways'.
Marcus Roberts

PREDOMINANT DRUG POLICY: ERADICATING SUPPLY

Marcus Roberts argued that the dominant drug policy paradigm of the past 40 years had been characterised both by its overarching *objective* - elimination or substantial reduction of drug use - and by the *means* by which this had been pursued – supply-side initiatives, and particularly uncompromising law enforcement.

This paradigm has failed on its own terms. The United Nations Office on Drugs and Crime (UNODC) World Drug Report 2005 concluded that 200 million people worldwide had used an illegal drug in the previous 12 months, an increase of 15 million on the previous figure. The wholesale value of the international drug market is estimated at US $94 billion, compared to $6.7 billion for beer and $5.7 billion for coffee. The retail value is estimated at $391 billion.

EVALUATING SUPPLY ERADICATION

The BFDPP had critically considered examples where there was a prima facie case for saying that law enforcement had reduced the supply of illicit drugs. It reached five principal conclusions.

1. Well-documented examples of successful supply reduction are few and far between. Over a quarter of 95 countries reporting to the UNODC *claim* drug use is falling within their jurisdictions but it is impossible to verify these claims, because these countries are not identified by the UNODC. These claims must be viewed with suspicion in these circumstances.

2. Where there is evidence for falls in supply, the role of law enforcement is often unclear. The Australian heroin drought followed the seizure of a large shipment of heroin. But the impact of this on heroin supply in Australia was only one in a range of factors - specifically, poor opium harvests and the growth of an alternative Chinese market.

3. Supply reduction is typically short-lived. The Australian heroin drought began in 2000 and was effectively over by 2003.

4. Where the supply of one drug is reduced, consumers tend to switch to other drugs. There is what economists call a substitution effect. An interesting example occurred in Iran following the 1979 revolution. After successful law enforcement activity targeted alcohol production, prices rose and there was substitution of opium for alcohol.

5. Reductions in drug supply may only be achievable at an unacceptable cost to human rights and democratic norms. For example, the Taliban achieved a massive reduction in opium production in Afghanistan, and drug markets were contained in many former Soviet countries during periods of communist oppression.

A VIABLE ALTERNATIVE

Marcus Roberts argued that there was a need for a fundamental shift in the drug policy paradigm. The aim of drug policy should be to manage drug use and drug markets with the objective of minimising drug-related harms. He quoted the first Beckley Foundation Report which concluded: 'a drug free world is an impossible ideal. A world in which far less harm is caused as a result of the production, trafficking and consumption of drugs is both an inspiring ideal and an achievable objective.'

He added two caveats. First, it would be wrong to conclude that supply-side initiatives have had no impact on drug use and markets. There is good evidence that law enforcement has helped to *contain* the growth of drug markets, which remain far smaller than the global markets for tobacco and alcohol. A significant relaxation of drug laws may result in a significant expansion in drug use. Second, the drug policy debate has been excessively and unhelpfully polarised – for example, pitching 'supply reduction' against 'harm minimisation', and 'legalisation' against 'prohibition'. This oversimplifies a highly complex and subtle public policy issue. The 'war on drugs' has failed, but the question 'where do we go from here?' is not as straightforward as is often supposed. The future of drug policy does not hinge on an either/or choice between two mutually exclusive extremes, but on the exploration of a range of different policy configurations, combining supply-side and demand-side measures in a variety of ways.

KEY POINTS

A zero-tolerance approach has failed to reduce drug use and drug markets, but there is some evidence that it has contained their expansion.

Examples of successful supply reduction are few and far between, they tend to be short-lived and the causal role of law enforcement is unclear.

Zero-tolerance initiatives have been most effective at reducing drug markets and production where governments have adopted draconian policies that would be unacceptable in liberal, democratic polities.

The drug policy debate has been excessively polarised. There are a range of possible drug policy configurations balancing supply-side measures and demand reduction in different ways.

RESPONDENT

PROFESSOR FRANCISCO THOUMI

DIRECTOR OF THE FACULTY OF ECONOMICS AT UNIVERSITY DEL ROSARIO IN COLOMBIA

'On the demand side, it is true that current supply-side policies have contained the problem, but that leaves many questions unanswered … one effect of current policies in producer countries - and this results simply from the illegality of the product - is to give strong competitive advantages to countries where there is a high potential for illegality'.
Francisco Thoumi

Francisco Thoumi focused on the negative consequences of drug illegality for Latin America, and on supply-reduction initiatives targeted at producer countries in the developing world.

He noted that many of the assumptions made about the consumer behaviour were based on simplistic psychological models. The retail price of cocaine in the Andes is 1-2% of the price in Europe or the United States. There has been no significant epidemic of cocaine use in this region.

DRUG PRODUCTION: WHERE, WHY, AND WITH WHAT CONSEQUENCES?

The cultivation of plant-based drugs is concentrated in a small number of producer countries. This is a consequence not only of the lack of viable economic options, but also of the illegality of the product. Coca production does not involve significant skills or capital investment – a microwave oven is the most expensive equipment needed to refine cocaine. Prohibition gives a competitive advantage to countries where there is a higher propensity to illegality. Illicit drug production will tend to flourish where states and civic cultures are weak, and there is a lack of social control – especially if the state has lost control of parts of its territory.

Supply-reduction initiatives targeted at producer countries have failed to take account of these characteristics. On the contrary, they have often further damaged civic cultures and compounded political instability. For example, the prohibition of coca consumption in Peru and Bolivia has been politically divisive, because coca is an important part of Indian culture and identity. The enforcement of coca laws has symbolic significance in societies where white society and Indian cultures are not well integrated. An unintended consequence of the prohibition of coca has therefore been to fuel political disaffection in Indian communities.

MANAGING COCA

Francisco Thoumi argued that a change in the legal status of coca would have a positive impact in Latin America. Coca is a Schedule One drug, alongside cocaine and heroin. The UN could establish a system of legal production of coca, and this would improve community relations in countries like Peru and Bolivia. The legalisation of coca

consumption would reduce political tension and social division, and, by increasing social cohesion, the overall impact on illicit drug production in Latin America could therefore be positive in the longer term.

Limitations of Current Coca Management Practices

Simplistic supply-reduction policies that do not address the deeper question of why countries are producing illicit drugs will not work and will have negative, unintended consequences. While recent initiatives have reduced the total acreage devoted to drug production in the Andean countries by 10-20%, this has not reduced output. The industry has adapted by increasing levels of productivity - including the development of plants that are resistant to sprays or have a higher coca content - and planting in smaller and less easily identified plots. At the same time, anti-drug policies are creating serious political problems. For example, in Columbia, the strength of anti-drug policies has resulted in the war lords becoming stronger and taking over drug markets.

Francisco Thoumi also challenged the official UN figures on coca and opiate production, as provided by the International Narcotics Control Board. He claimed that the figures simply did not add up. The total output figure minus the seizure figure was only half of the UN figure for consumption. This suggests that actual production levels are substantially higher than is estimated by the relevant UN agencies.

Key points

The production of key prohibited drugs is concentrated in a small number of developing countries.

Drug prohibition gives a competitive advantage to countries with a high level of illegality, and further erodes civic culture and political stability.

Prohibition of coca has been highly divisive in Latin America, because of its symbolic importance for Indian identity and culture.

Supply side reductions that do not address the deeper question of why countries are producing illicit drugs will not work and are likely to fuel social disorder

The UN should remove coca from Schedule One and take responsibility for legal production. This could improve the long-term prospects for tackling drug production by reducing social divisions.

Discussion

Dr. Sandeep Chawla, Head of Policy Analysis and Research Branch at UNODC, agreed that it was important not to caricature policy positions. He emphasised that the UN line 'A drug free world - we can do it!' is a PR slogan, and has no legislative identity.

He proceeded to issue a 'health warning' about key figures in the UNODC world drug reports. The 15 million increase in the numbers of people who said that they had used

an illicit drug in the previous year may be a consequence of changes in reporting systems, to a greater or lesser degree. While there has been a substantial increase in drug misuse, it is impossible to determine the scale of this 'epidemic' as there is a lack of reliable baseline figures. Politicians and the media want clear and unambiguous quantitative information from the UN. The reality is that it is often not available.

Francisco Thoumi asked why the UN published unreliable figures.

Sandeep Chawla responded that this was the best data available. The alternative was for the UN to publish nothing, with the possible consequence that the debate would become fixated on ideological positions, unconstrained by the evidence base. The limitations of the published data were discussed in the fine print of the world drug reports.

Mike Trace, Co-Director of the BFDPP, agreed that the reality was that international bodies such as the UN and the European Union were required to report on progress on drug strategy objectives and this created a genuine professional dilemma given the limits of the data. One of the main obstacles was that many UN member states were unable or unwilling to provide adequate data, and funding to improve data collection was generally not a priority. If Mozambique, for example, was unable to answer any of the questions posed by the UN, then it would not become able to do so without significant infrastructure investment. This was an issue for donor countries.

Daniel Wolfe, Deputy Director of International Harm Reduction at the Open Society Institute, accepted that the UN was under pressure to publish, but responded that it would be useful if the caveats and disclaimers found in the fine print were made more visible. Progress on drug policy required greater openness on the limitations of the evidence base, a critical engagement with the epidemiology, and a focus on the gaps in existing knowledge. Self-reporting is notoriously unreliable and there is a shortage of good baseline data. It would be helpful to acknowledge these limitations.

Dr. Tomas Zabransky, Senior Research Fellow at Charles University in the Czech Republic, suggested that gaps in the data had resulted in the production of some meaningless indicators that were open to manipulation by more powerful countries. The development of a UN Illicit Drug Index, as discussed in the World Drug Report 2005, could make things worse.

Dr Anna Chisman, Chief of Public Communications at the Inter-American Drug Abuse Control Commission (CICAD), USA, asked whether there would be any unintended consequences of moving coca out of Schedule One under the UN Conventions.

Francisco Thoumi replied that this was a simple idea, and that it did not represent a radical departure from the current legal situation. The 1988 UN Convention stated that traditional uses of coca would be tolerated in regions where there was historical evidence or prior use, and Peru and Bolivia both have systems by which the government can oversee some licit coca production. But these systems are not working, and are perceived to discriminate against Indian culture. The UN should design an international system for the legal market in coca, similar to current arrangements for legal production of opium poppy. This would help to diffuse political tensions in Latin America.

REDUCING DRUG-RELATED CRIME: AN OVERVIEW OF THE GLOBAL EVIDENCE

DR. ALEX STEVENS
SENIOR RESEARCHER AT THE EUROPEAN INSTITUTE OF SOCIAL SERVICES,
UNIVERSITY OF KENT, UK

'*Especially in areas of high controversy, politicians tend to ignore the evidence and go with the ideology, and this seems to be happening in the debate over drugs*'.
Alex Stevens

Dr Alex Stevens began by observing that drug policies were increasingly justified by their impact - actual or putative - on drug-related crime. The BFDPP has conducted a review of the international evidence on the cost effectiveness of crime-reduction initiatives.

DRUG POLICIES: WHAT WORKS

Drug treatment is probably the most cost-effective drug policy measure. It has been calculated in the UK - on the basis of data collected for the National Treatment Outcome Research Survey (NTORS) - that every £1 spent on drug treatment saves between £9.50 and £18 on the subsequent costs of problem drug use, particularly drug-related crime. Research shows that 'situational crime prevention' is also effective. A study conducted in Yorkshire, England recorded a 30% reduction in crime on housing estates built on 'secure by design' principles - for example, landscaping of spaces to improve natural surveillance. Dr. Alex Stevens noted, however, that design driven by crime prevention imperatives would not necessarily create good environments for people to live in - for example, straight, brightly lit roads with conspicuous CCTV cameras and a lack of hedges and trees. Early interventions to support vulnerable families - such as the Perry pre-school programme in the US - could also have a positive impact on crime.

WHAT DOES NOT

The evidence on poverty reduction, suppression of organised crime and alternatives to prison is 'promising' but inconclusive. Other approaches to drug-related crime do not appear to be cost effective; specifically, these include some forms of drug law enforcement, most forms of drug education, the mass imprisonment of drug users, and drug testing without treatment.

Alex Stevens stated that there is no conclusive evidence that imprisonment is a cost-effective policy for either deterrence or rehabilitation. Its retributive function is not amenable to measurement or objective analysis. The incapacitation of drug offenders does appear to have a small positive impact on drug-related crime. A recent US study of the effects of the massive increase in the imprisonment of drug offenders found that it had probably resulted in a small but significant fall in violent and property crime (1-3%). But it also concluded that this was not likely to be a cost effective way of reducing

offending when balanced against the economic and social costs of a fifteen-fold rise in the imprisonment of drug offenders in the US since 1980.

Alternatives to Prison: Drugs Courts and Their Implementation

Alex Stevens contrasted approaches to diverting offenders from the prison system in the US and in Europe. In the US, drug courts have tended to deal with drug offences, such as possession and supply, and exclude offenders who have committed drug-related crimes, such as robberies to fund drug purchases. It is precisely this latter group that has been targeted by diversionary programmes in Europe, such as Drug Treatment and Testing Orders (DTTOs) in the UK, now called Drug Rehabilitation Requirements (DRRs).

The US General Accountability Office has reviewed the drug court programme in the US. It concludes that there have been positive results on recidivism both during and after participation. Another study of a US programme that does deal with drug-related crimes was also positive. The Drug Treatment Alternative to Prison (DTAP) Programme in New York City has treated over 2,000 people who have pleaded guilty to serious non-violent crimes and would otherwise have gone to prison. Those who participated in the programme were 33% less likely to be rearrested and 67% less likely to be re-incarcerated than imprisoned offenders, according to a study conducted by the National Centre on Addiction and Substance Abuse.

Research on Drug Treatment and Testing Orders in the UK has been less encouraging. Of the people sentenced to a DTTO in England in 2001, 86% were reconvicted of a further offence within two years. However, Alex Stevens noted that this is not the only possible measure of effectiveness. In particular, offenders completing DTTOs reported that their offending was less frequent.

He also drew attention to the 'net-widening' tendency of programmes designed as alternatives to prison. Rather than providing an alternative for offenders who would otherwise have received prison sentences, these initiatives may drag lower level offenders into the criminal justice system and increase the total number of people under state supervision. In the UK, there has also been an expansion in the use of drug testing in the criminal justice system, which is often separated from any corresponding duty for the state to provide treatment. Aside from the human rights issues of compulsorily testing people who have not been found guilty of a crime, there is little or no evidence that testing is effective for crime prevention and there is even some evidence that suggests that it may increase offending.

Key points

Crime reduction is a core aim of drug policy. Drug treatment is the most cost-effective method of crime reduction. Other effective measures are 'situational crime prevention' and early interventions for vulnerable families.

Neither drug testing nor mass imprisonment is cost effective. The diversion of drug offenders from the criminal justice and prison systems appears to have a positive impact on recidivism; at least this is the experience of drug courts in the US.

RESPONDENT

PROFESSOR MARK KLEIMAN

PROFESSOR OF PUBLIC POLICY AT UNIVERSITY OF CALIFORNIA LOS ANGELES, USA.

'The reality is that consensus does not yet exist on any adequate theory or evidence to support any single approach to managing the drug problem'.
Mark Kleiman

Professor Kleiman noted that the drug most associated with crime was alcohol. When considering the relationship between crime and illicit drugs, it is therefore important to consider the interface between alcohol and drug policy.

MIXING DRUGS: WHAT CONSEQUENCES FOR CRIME?

In the first session there had been a discussion of the substitution effect, but this is not the only form of interaction between drugs. Another important mechanism is 'complementarity': the consumption of one drug is associated with the use of another - for example, smoking a cigarette with a cup of coffee.

This is highly significant for crime reduction. If cannabis is a substitute for alcohol, then liberalisation of cannabis laws could reduce crime, as campaigners argue. But if cannabis and alcohol are complementary, then this will not happen. There is little research on this relationship or on the impact of drug prevention initiatives in schools on alcohol consumption. We do know that cocaine is powerfully complementary to alcohol. This is one good reason for maintaining strict controls.

CRIMES ARISING FROM DRUGS

Turning to illicit drugs, Professor Kleiman distinguished between three forms of drug-related offending:

- crime by users;
- crime by and against drug dealers; and
- crime surrounding flagrant drug markets.

It was important to note that drugs differ, selling styles differ and times and places where drugs are traded differ. It is not possible to reach blanket conclusions on drug-related crime reduction. Different policies are appropriate to different stages of the epidemic cycles characteristic of drug markets and consumption patterns.

A large proportion of crime by users is committed by dependent users of expensive drugs. This suggests that properly targeted drug treatment could be an effective means of reducing this kind of crime. However, most probation systems are not particularly good at ensuring compliance. In the US, many offenders who are coerced into drug treatment do not need it. An evaluation of one Drug Court concluded that 44% of people who were referred for drug treatment had not met diagnostic criteria for substance

misuse disorders. Drug Courts are soaking up a large proportion of drug treatment resources.

Professor Kleiman did not accept that drug testing was unlikely to be effective in the absence of drug treatment. A majority of people who experience drug problems recover without professional involvement. Drug users with chronic relapsing conditions comprise a small minority, even among dependent users. He commented that 'an alternative to insisting that people get drug treatment is to insist that they stop using drugs and to back that up with constant testing, and predictable but mild sanctions for non-compliance'.

Drugs, Violence and Tactical Drug Strategies

It was a mistake to identify crime committed by and against dealers with organised crime, noted Kleiman. 'There is no reason to think that organised drug dealers are more violent than disorganised drug dealers… given the externalities of violence in drug markets, you might expect that organised crime would lead to less violent drug dealing than disorganised crime'. Where drug dealers are unprotected by organised networks, they are particularly vulnerable to victimisation. Drug dealers carry large quantities of money and drugs and cannot involve the police if they are attacked or robbed. Therefore, it is not surprising that many are armed.

Flagrant drug markets are a cause of significantly more crime and nuisance than discrete markets. A crack down on open markets can have economic and social benefits, even if it does not reduce the total quantity of drugs sold. It is possible to drive flagrant markets out of existence by arresting everybody involved, but this is difficult and expensive. There are cost-benefit arguments for limiting arrest and imprisonment, given the opportunity costs for criminal justice agencies. There are practical reasons for focusing on the most violent dealers. If this group is targeted by law enforcement, then recourse to violence ceases to confer a competitive advantage and becomes a disadvantage. A low arrest and low expense approach to closing down flagrant drug markets has recently been successful in High Point, California, and there is no evidence of displacement to open markets elsewhere.

Key points

It is not possible to reach general conclusions about drugs and crime because drugs differ, markets differ and situations change at different points of epidemic cycles.

Alcohol is the drug most associated with crime. It is therefore important to take account in policy of the way that illicit drugs interact with alcohol.

Compelling abstinence is a viable and cost-effective alternative to coerced drug treatment. Most people who experience substance misuse problems recover without professional involvement.

Flagrant drug markets are the main cause of crime and nuisance. There is evidence from

the US that they can be successfully closed down by law enforcement initiatives, and such initiatives should have tactical goals such as targeting the most violent dealers.

DISCUSSION

Prof. Charles Schuster, Former Director of NIDA, USA, claimed that a programme that had been running in Lancing, Michigan for the past 20 years confirmed that drug testing to enforce abstinence backed up by the threat of short jail sentences could be effective.

Mike Trace, Co-Director of the Beckley Drug Policy Programme, suggested that the more positive experience of abstinence-only orders in the US than in Europe could be explained by effective targeting. This approach was most likely to succeed among socially included drug users, with a fear of the criminal justice system and the motivation to change their behaviour. However, the focus in the UK and continental Europe was on problem drug users with deep seated problems, including experience of social exclusion and marginalisation, and they were often not afraid of prison, which had been assimilated as a routine part of their lives. Drug testing as a means of enforcing abstinence was unlikely to be successful for this group.

Mark Kleiman questioned whether those people who said that they did not fear prison would tolerate a situation where their schedule was routinely interrupted by 48 hour spells in prison, particularly in solitary confinement. This could be made sufficiently aversive without becoming cruel. If there is a small group of problem drug users who cannot be coerced through drug testing or treatment, then it is likely that they will be high volume offenders and the benefit of their incapacitation will compensate for incarceration costs.

Alex Stevens said it was a well-established finding that a small percentage of problem drug users commit a high volume of crime. He was not convinced that this group's behaviour could be changed by aversive treatment. It was important to look at the wider social context and provide them with opportunities to change their lives. He also noted that crack downs on flagrant markets had been spectacularly unsuccessful in some countries. There were fewer open drug markets in Holland than the US. This was not the result of a crack down, but the presence of other drug distribution mechanisms.

Barbara Sahakian Professor of Clinical Neurophysiology at the University of Cambridge, UK, said that she was particularly concerned about the impact of amphetamine use on the brain.

Prof. Charles Schuster said that there was evidence that amphetamines cause lasting damage to the brain, as well as inducing acute toxic psychosis, which could make people very dangerous. However, while there was a permanent deficit in brain chemistry, there was evidence that prolonged abstinence did result in a significant degree of recovery, as the brain compensated for lost function.

Mark Kleiman noted that methamphetamine was still in the rising phase of its epidemic cycle. If sentences for supplying methamphetamine were increased so that they were

much higher than for other drugs, this might act as a disincentive to dealers. But baseline sentences for drug offences are so high that this is not a practical option.

Dr Diane Riley from the Canadian Foundation for Drug Policy did not want to see a moral panic about methamphetamine, and suggested that the most serious problems arose when drug law enforcement drove people to resort to readily available but potentially harmful substances, such as solvents and alcohol. She claimed that drugs like crack and methamphetamine were the product of drug prohibition, and that 'these are not substances that people would choose as a first means of altering consciousness'.

REDUCING DRUG-RELATED HARM TO HEALTH

PROFESSOR GERRY STIMSON
EXECUTIVE DIRECTOR OF THE INTERNATIONAL HARM REDUCTION ASSOCIATION AND
DIRECTOR OF THE CENTRE FOR RESEARCH ON DRUGS & HEALTH BEHAVIOUR,
IMPERIAL COLLEGE, UK.

> *'HIV/AIDS epidemics can be prevented and reversed. Interventions have been adapted and implemented in a number of different countries, but global coverage of harm reduction and drug treatment remains extremely poor'.*
> Gerry Stimson

Professor Gerry Stimson explained that the main focus of his paper would be HIV/AIDS infection, because of its centrality to the current international political agenda.

INTRAVENOUS DRUG USE AND HIV/AIDS

It has been estimated that there are 13.2 million injecting drug users (IDUs) worldwide, with the largest numbers in developing and transitional countries - specifically in Eastern Europe and Central Asia, East Asia and the Pacific and South East Asia. Around four million IDUs have HIV/AIDS. Outside of Africa, about 30% of all HIV/AIDS infection is related to injecting drug use - in countries like Russia, the figure is 50-60%. The eight to nine million IDUs worldwide who have not yet been infected are an obvious priority for HIV/AIDS prevention strategies.

Harm-reduction initiatives have had a demonstrable impact on the spread of this disease. In the UK, during the 1980s, a Conservative government launched a major information and harm reduction campaign. Consequently, the UK has contained HIV/AIDS infection rates, which have been well below 2% among IDUs - about 100 to 125 new infections a year.

HARM MINIMISATION STRATEGIES

We know 'what works' - notably needle exchange and substitution treatment - but global provision of harm-reduction services is extremely poor and limited. In Russia, for example, there has been a big effort to improve needle exchange, and it is now estimated that about five million syringes are distributed to approximately two million IDUs each year. But, even with this expansion of services, it is estimated that less than one per cent of drug injections in Russia will use a sterile syringe provided by a needle exchange.

The global manufacture of methadone has also increased massively since the early 1980s. The use of substitution treatments continues to grow and develop. In particular, China has recently taken the decision to introduce methadone treatment. The Chinese Government is planning to create 15,000 methadone clinics in the next three years, covering 300,000 patients. But substitution treatment is still extremely limited. Around 50% of all methadone is consumed in the United States. Substitution is available in only a

very small number of countries outside of the European Union, North America, Australia and New Zealand.

The provision of antiretroviral (ARV) treatment to IDUs who have already been infected is even more limited. While the numbers getting this treatment have increased recently, it is only available in 22 countries outside of the European Union, North America, and Australasia. In these other countries, leaving aside Brazil, only about five thousand of the four million infected IDUs are currently getting access to ARV treatment.

HARM MINIMISATION & THE UN: THE OVERBEARING INFLUENCE OF THE USA

Against this background, Professor Stimson turned to consider the politics of harm reduction. In 2001, the United Nations General Assembly held a special session on HIV/AIDS, which supported a harm-reduction approach, and recognised the importance of the provision of sterile injecting equipment. A growing acceptance of harm reduction among UN agencies had been building up for a decade before the United Nations General Assembly Special Session (UNGASS). By 2001, the UN system, including the UNODC, had a clear commitment to needle exchange programmes. In 2004, Antonio Costa, Head of the UNODC, was publicly championing the harm-reduction agenda at an international conference on HIV/AIDS in Bangkok.

But the UNODC has recently bowed to US pressure. The day after meeting Bobby Charles from the US State Department on 10 November 2004, Costa sent him a letter stating that the UNODC 'neither endorse needle exchange as a solution to drug abuse, nor support public statements advocating such practices'. In view of the speed of this response to Bobby Charles' visit, it is not possible that it was subject to appropriate consultation in the UN system. But its effect was, literally, to undermine the UN position overnight. The UNODC subsequently reviewed its website and documentation to weed out references to harm reduction and needle exchange.

Subsequent events demonstrated that the lobbying activities of non-governmental organisations (NGOs) could help to shape international drug policy, at least in areas where there was already strong support within the system for their position. This was evidenced both at the meeting of the UN Commission on Narcotic Drugs, Vienna, March 2005, and the UNAIDS programme meeting in June. At the Commission meeting in March, only the US, Japan and Malaysia voiced concerns, but this is a consensus meeting and they were therefore able to block any resolutions about harm reduction. At the UNAIDS meeting, the US objected to the inclusion of the term 'syringe exchange' in a prevention document, but there was a lot of pressure from other countries to include it. In the end, the document was approved, but the US reserved its position and stated that it was unable to fund or support needle exchange.

KEY POINTS

Harm reduction initiatives have had a dramatic and demonstrable impact on the spread of HIV/AIDS among injecting drug users.

Global provision of harm reduction is patchy and limited outside of the European Union, North America, Australia and New Zealand.

The politics surrounding harm reduction are a barrier to progress. The US government has pressured the UNODC into withdrawing support for harm reduction, specifically needle exchange. Lobbying by non-governmental organisations has had a positive impact.

RESPONDENT

DR. ANINDYA CHATTERJEE

SENIOR ADVISER, PREVENTION AND PUBLIC POLICY, POLICY, EVIDENCE AND PARTNERSHIPS DEPARTMENT AT UNAIDS

> *'Even during the difficult discussion at different multilateral forums around harm reduction and needle exchange last year, there was little opposition on the question of the evidence for the effectiveness of these interventions. Even if you looked at the US Government's reservation, nobody was arguing for or against evidence. The issue was how politically acceptable harm reduction is and how it can be packaged in a programme'.*
> Anindya Chatterjee

Anindya Chatterjee agreed that injecting drug use was one of the main drivers of HIV/AIDS epidemics, and that provision of harm-reduction services for drug users worldwide was unacceptably low. The real argument was not about the evidence base for the effectiveness of such services, but about ideological and political acceptability.

PROBLEMS WITH JOINING UP DRUG STRATEGIES

It was important to be aware of the political and institutional barriers to progress, and particularly the tendency for different policy communities to work disparately. At UN level, there had been challenges in joining up drug and HIV/AIDS policy. An UNGASS report on drug-demand reduction produced in 1998 had not even mentioned HIV/AIDS, referring to the adverse consequences of drug misuse in general terms. There had been significant progress since 1998, but even today, there is not one single UN drug policy document that has been approved by member states (as distinguished from publications of the UN secretariat) which has unambiguously supported harm reduction.

There are formidable obstacles to joining up policy at the national level. Policy on drugs and HIV/AIDS is the concern of three sectors, which are located within different structures and ministries in many countries: the drug control sector, the drug treatment sector and the HIV/AIDS control sector. At UN level, all these policy functions must interact with foreign affairs ministries. In most countries, there are no formal mechanisms to facilitate dialogue between these different agencies. Similarly, many NGOs concerned with drug treatment, harm reduction and HIV/AIDS lack mechanisms for constructive dialogue, both nationally and internationally.

Dr Chatterjee noted Gerry Stimson had spoken of 'bitter policy debates' at the highest level but observed, 'this is only the tip of the iceberg … it goes down to ground level where even grassroots organisations can be pitted against one another and have different ideologies'. Harm reduction initiatives have always been perfectly acceptable within health policy; it is within the drug policy context that it is controversial. Improved dialogue between these sectors would improve understanding of harm reduction. This will require systematic investment at national level, to create institutions that provide space for productive cross-sectoral dialogue and debate.

Currently, there is a step change on harm-reduction work with drug users in many countries. The Chinese methadone programme is a good example, but this is being rolled out alongside extremely punitive drug policies, including the death penalty and labour camps for drug traffickers. Lack of effective dialogue and of a joined up strategic approach has resulted in the Ministry of the Interior permitting the Ministry of Health to roll out a methadone maintenance programme, but without any corresponding roll back of China's punitive drug control programme. There have been similar developments in Malaysia.

From the UNAIDS perspective, there is a lot to learn from the messy world of policy implementation at national level, which is not necessarily revealed by more abstract research. Some of the most important lessons concern structural and institutional constraints. It is vital to facilitate dialogue between different ministries and NGOs at national level. Generally, it has been the case that ministries of the interior have much greater power and influence than ministries of health. We need to get a dialogue started, so that they can work more effectively together in pursuit of common policy objectives.

KEY POINTS

The evidence for the effectiveness of harm reduction is not contested but the arguments surrounding it are political and ideological.

Law enforcement and health policies are often not joined up. Progressive harm-reduction initiatives may be rolled out alongside punitive drug policies.

Barriers to progress are institutional, as well as ideological, and for drug policies to be successful, there must be much more cohesion in policy development and implementation at national and international levels

DISCUSSION

Henri Bergeron, Head of Policy at the European Monitoring Centre for Drugs and Drug Addiction, said that it is not enough to say that politics outweighs evidence. It is necessary to go beyond this and look at political mechanisms and processes. If the progressive drug policy lobby is to have a political impact, then it needs to understand how decisions are made and by whom. It would therefore be useful to organise a seminar to discuss drug policy processes with political scientists with the relevant expertise.

Gerry Stimson agreed. There were good case studies available of political configurations that had been sympathetic to the advance of harm reduction, notably in the UK in the mid 1980s. Other national situations posed interesting questions inviting political analysis. For example, why were there such huge obstacles to the development of methadone maintenance in Russia at that time?

Carel Edwards, Head of Unit Drugs Coordination at the European Union, added that

international organisations were placed in a difficult position where dominant member states opposed harm reduction - for example, the US objections to the UNODC - and that the political constraints that they were under should not be underestimated, particularly given their dependence on the major donor countries.

Dr. Sandeep Chawla, Head of Policy Analysis and Research Branch at UNODC, agreed that if we were to take the debate forward constructively it was important to look inside 'the black box of policy'. One dimension of the politics of drug policy was that governments sometimes adopted different - and even contradictory - positions, depending on their audience - for example, advocating positions in international fora that differed from their national policies.

Cindy Fazey, Professor of International Drug Policy at Liverpool University, UK, said that it was important not to underestimate the extent of US control over international drug policy. When the US encountered a harm-reduction programme in South East Asia within which needle exchange was one component, it went to the UNODC and said that if this project was not stopped, it would withdraw all funding from Asia. The US has the financial power to maintain a tight stranglehold on international policy.

Daniel Wolfe, Deputy Director of the International Harm Reduction Programme at the Open Society Institute, complained about the manufacture of scientific uncertainty by the United States. The US routinely disputed powerful evidence for the effectiveness of needle exchange on the basis of a few small - often non-peer reviewed – studies, similar to the way it responded to uncomfortable research findings in the environmental sciences. Other countries fail to challenge the US and have remained silent in the debate about harm reduction - notably, the countries of the former USSR.

Afternoon Session

Impact of International Drug Control Systems on Scientific and Medical Research

Chaired by Prof Colin Blakemore

CHAIR'S INTRODUCTION

PROFESSOR COLIN BLAKEMORE
CHIEF EXECUTIVE OF THE MEDICAL RESEARCH COUNCIL IN THE UK AND WAYNFLETE PROFESSOR OF PHYSIOLOGY AT OXFORD UNIVERSITY.

Professor Blakemore began the afternoon session by stating that it was important to share international expertise and experience on the therapeutic potential of illicit drugs. This did not necessarily have a direct bearing on the issue of their illicit use as recreational intoxicants or by dependent users. But drug policy should be informed by an understanding of toxicology and the effects of psychoactive substances on the human brain. There was growing evidence that drugs that are consumed illegally can have beneficial therapeutic uses in the treatment of a range of medical conditions.

THE MEDICAL POTENTIAL OF CANNABIS

PROFESSOR LESLIE IVERSEN
PROFESSOR OF PHARMACOLOGY AT UNIVERSITY OF OXFORD

'An entirely new biological signalling system has been discovered as a result of work on this psychoactive herbal substance, in the same way as research on morphine from the opium poppy a few decades earlier led to the discovery of a whole physiological system, whereby the brain makes its own morphine-like chemicals. It is the same with the cannabinoid receptors. This is a pretty exciting discovery. It offers opportunities to scientists to manipulate the system to get beneficial outcomes'.
Leslie Iversen

The medical potential of cannabis is currently a very exciting area of scientific research. It has also been the subject of a number of high profile investigations. These include a review by the House of Lords Select Committee on Science and Technology in the UK and the National Academy of Science in the USA.

There is nothing new about the medicinal use of cannabis. It was included in the pharmacopoea of the UK for 150 years, but dropped out in the 1970s. There has been a similar story in other Western countries.

POSSIBLE MEDICAL APPLICATIONS FOR CANNABIS

Cannabis acts on the higher brain centres as an intoxicant. But there is also good evidence for it is effectiveness as an anti-emetic (a substance that reduces nausea and vomiting), appetite stimulant and controller of pain. It appears to be most effective for the treatment of neuropathic pain, caused by damage to the nervous system, and associated with medical conditions including diabetes and AIDS. This is important because neuropathic pain is often not responsive to conventional analgesic medicines, such as morphine. By contrast, it is less likely that cannabis products will be developed for the treatment of glaucoma or nausea, as there are already effective medicines on the market. It is a particularly effective appetite stimulant but this has a limited application, namely to treat wasting in AIDS patients, and most people with appetite disorders want to lose weight.

CURRENT PHARMACEUTICAL ALTERNATIVES

Products containing the principal active ingredient in cannabis – delta 9-tetrahydrocannabinol or THC - are available in both the UK and the USA for the treatment of a limited range of conditions. For example, nabilone, a synthetic analogue of THC (dronabinol), is licensed in the UK for prescription to patients with nausea or vomiting resulting from cancer chemotherapy, which is unresponsive to other drugs, and is used in some pain clinics. On advice from the World Health Organization, the UN Commission on Narcotic Drugs rescheduled dronabinol under the UN Convention on Psychotropic Substances 1971.

The pharmaceutical company GW Pharmaceuticals claims that clinical trials have shown that its herbal cannabis product has analgesic benefits for people suffering with Multiple Sclerosis (MS). The Canadian regulatory authorities have approved this product for use by MS patients and the UK government says that patients can have this treatment if they wish, but the product has to be imported from Canada.

Positive results were also found in the first major clinical trial of cannabis use in the treatment of MS, sponsored by the UK Medical Research Council, which published initial findings in 2003. More than six hundred MS patients were treated with a placebo, THC extract or herbal cannabis. Patients reported not only a reduction but also a positive impact on muscle spasm and quality of life measures, such as sleep patterns. Cannabis products appear to have a long-term beneficial effect on both subjective and objective measures, with THC producing better results than herbal cannabis. It is possible that cannabis may have a protective effect, slowing down the course of the disease.

ECPLORING & EXPLOITING THE PHYSIOLOGICAL EFFECTS OF CANNABIS

What is new in the past 10 years or so is the discovery that the brain contains specific protein receptors that recognise this plant, called cannabinoid receptors. Two types of cannabinoid receptor have been identified: the CB1 receptor and the CB2 receptor. CB1 receptors are present on nerve cells in the brain and spinal cord, as well as in some peripheral tissues (i.e. tissues outside the brain); CB2 receptors are found mainly on cells of the immune system and are not present in the brain. This means that an entirely new biological signalling system has been discovered as a consequence of work on a psychoactive herbal substance. This is an exciting development, as scientists can potentially manipulate this system to achieve beneficial outcomes for patients. In addition, animal experimentation suggests that the endogenous cannabinoid system interacts with the opiate system.

There is likely to be a wave of new research stemming from the discovery of these endogenous cannabinoid mechanisms in the human body, leading to the production of new drugs which interact with this system. For example, a French company is currently looking at a cannabinoid receptor antagonist drug called rimonabant, which is in the advance stages of development, and is indicated for the treatment of obesity and smoking cessation. The discovery of the cannabinoid system also provides an alternative approach to one of the main problems in realising the medical benefits of cannabis, which is that the majority of patients want the therapeutic benefits but not the accompanying 'high'. Experiments appear to show that mice do not respond in the usual way to the psychoactive properties of THC if their CB1 receptors are knocked out.

KEY POINTS

Cannabis has a number of medical uses, including treatment of neuropathic pain.

Products containing the main active ingredient in cannabis (THC) are available in the UK and US, and the Canadian government has approved a herbal cannabis product for the treatment of Multiple Sclerosis.

An endogenous cannabinoid system has been discovered in the human body, creating new possibilities for medical advances through the manipulation of this system - for example, in the treatment of obesity.

DISCUSSION

Professor Iversen was asked about the indication for epilepsy and Parkinson's Disease. There is a scientific rationale for exploring the potential use of cannabis as a treatment for epilepsy, but there is not yet a body of solid clinical data. He was unaware of any research on Parkinson's disease. The literature on cannabis is full of case studies, but these do not provide a basis for approving treatments and medicines.

Does cannabis/THC have a psychoactive effect when it is used as an analgesic? This is the critical question. Most successful trials have administered cannabis-based drugs in such a way that patients can control dosage to avoid getting 'high'. For most people, there appears to be a 'therapeutic window' within which they get the beneficial analgesic impact without the unwanted psychoactive effect. Patients who could not do this tended to drop out of the trial. Cannabis is not an easy drug to use medically because of this window, which is narrow.

If a psychoactive effect was discernible, then what was used as a placebo in the clinical trials? It could be difficult to ensure that patients were unable to distinguish between active drugs and placebos when testing drugs with an intoxicant effect. There is data on whether the subjects of clinical trials have been able to tell the difference - the answer seems to be that some could and others could not.

Do many people using cannabis illegally take it to self-medicate for anxiety and depression? It is possible, but the data is not there. MS patients who took the drug orally reported a beneficial impact on sleep and other quality of life measures.

THE EFFECTS OF MEDICAL REGULATION OF CANNABIS IN THE USA

ROBERT KAMPIA
EXECUTIVE DIRECTOR OF THE MARIJUANA POLICY PROJECT (MPP), USA

'Marijuana is treated more restrictively in the research context than any other drug of which I am aware … marijuana is, as far as I know, the most tightly restricted drug in the US'.
Robert Kampia

Marijuana is a Schedule One substance under US law, along with heroin and LSD. Schedule One drugs are not believed to have any medical use, in contrast to Schedule Two drugs such as morphine and cocaine.

OBSTRUCTIONS TO DEVELOPING CANNABIS AS A THERAPY

The politics of cannabis research in the USA is complex and fraught. The federal government 'talks out of both sides of its mouth'. The White House argues that medical use should not be expanded until further research is conducted through the Food and Drug Administration (FDA) process for approving new drugs. But the federal government makes it virtually impossible to conduct this research. The only approved source of marijuana for research purposes in the USA is owned and controlled by the federal government. So it is not possible to secure the basic building blocks to get the research going which is required for FDA approval.

In 1999, the Institute of Medicine released a landmark report, commissioned by the White House at a cost of around one million dollars. It found evidence of therapeutic value, but concluded that the existing evidence base was insufficient for FDA approval. The federal government responded by issuing official guidelines on the conduct of research for the first time. This guidance makes it more difficult to study the therapeutic uses of marijuana in the USA than that of any other drug. Research proposals have to be approved by the FDA, the Drug Enforcement Agency and the National Institute on Drug Abuse. The federal government has also created a special review panel.

Against this background, the Marijuana Policy Project (MPP) has also lobbied for federal acceptance of the general principle that patients who use marijuana for medical purposes, and with a doctor's approval, should not be arrested or imprisoned. This is not accepted by the federal government.

ESTABLISHED THERAPEUTIC APPLICATIONS

The right to use herbal cannabis therapeutically was pursued through litigation in the 1970s. In 1976, a man named Bob Randall was arrested in Washington DC for growing marijuana to treat glaucoma. He argued against his prosecution in the courts on grounds of medical necessity and won. Subsequently, Randall claimed that the federal government should meet his medical needs, and it agreed to ship him monthly supplies

of marijuana for the remainder of his natural life. An 'investigative new drug programme' was set up. A total of 14 patients - with medical conditions including glaucoma, MS and rare bone disorders - gained access to this programme. It was closed to new applicants by George Bush Senior in 1991.

In the 1970s and 1980s, clinical trials of cannabis were approved by the FDA, and, in 1984, it approved a THC pill for use as a prescription medicine. As a consequence, people started to question the need for a medical marijuana campaign. But this lobby was rejuvenated in the early 1990s by AIDS activists, who argued that a pill was unsuitable for anti-emetic purposes. From 1994 to 1999, a physician called Donald Abrams from San Francisco, struggled unsuccessfully to get federal government approval for a study of the potential benefits of marijuana to AIDS patients. He eventually secured permission, but only after changing the focus of the study from the efficacy to the safety of marijuana.

Overcoming the Obstacles

There has been a campaign for change in federal policy on a state-by-state basis. Ten states have legalised the medical use of marijuana since 1996. In 1999, California legitimised the use of tax payer's money to fund research on medical marijuana. Around 18 studies have since been conducted at the University of California.

In 2005, an amendment was introduced in the US House of Representatives to prevent the arrest under federal law of patients using medical marijuana in the ten states where this is legal under local law. The amendment got 161 of the 218 votes required for it to pass, and will be re-introduced next year.

Key points

A report published by the Institute of Medicine and commissioned by the White House found some evidence for therapeutic use of marijuana. The government has issued research guidelines.

The US government will not expand medical use without further research, but has made it almost impossible to conduct research. It is more difficult to study marijuana than any other drug.

There has been progress at the state and local level, with medical use of marijuana legalised in ten states, but its use by patients is still prohibited by federal law.

Discussion

It is shocking that people with illnesses like MS are being arrested and imprisoned for use of medical marijuana. Is this really happening in the USA? Yes, there are many cases of people who were using marijuana with the approval of their physician who have been arrested.

Prof. Charles Schuster, Former Director of NIDA, said that he was in favour of the medical use of marijuana, in the sense that he opposed the arrest and imprisonment of patients with a medical prescription for its use. He was extremely concerned about federal government obstruction of clinical trials. However, he also expressed concern about the use of local ballots and the potential approval of new medication by voter referenda, which he considered incompatible with a scientific approach. He hoped that the active ingredients could be developed into effective medicines so that it was not necessary to use the herbal preparation.

THE SCIENTIFIC AND THERAPEUTIC POTENTIAL OF PSYCHEDELICS

PROFESSOR DAVE NICHOLS
PROFESSOR OF MEDICINAL CHEMISTRY AND MOLECULAR PHARMACOLOGY AT PURDUE UNIVERSITY, USA.

'We are all drug specialists here, but psychedelics like LSD are not really on the radar screen … I think it is one of the travesties of modern psychiatry and neuroscience that more people have not looked at this … there has not been a single study of LSD since the last one was shut down 35 years ago. Why is that? This is one of the most powerful psychoactive drugs known to man, and was heralded as a drug with unbelievable potential - as a breakthrough in psychiatry - and there has not been a single clinical study in 35 years'.
Dave Nichols

Between 1950 and the 1960s, thousands of studies were conducted on psychedelic substances, with such substances being hailed as a promising new technology for psychiatry, as well as having a role in mystical experiences. Since the early 1970s, such studies have been halted. Professor Nichols set up the Heffter Research Institute in 1993 because nobody else was conducting clinical research on the medical and therapeutic use of psychedelics. The Institute has raised about $1.3 million in private funding since 1993, which is not a large amount of money, but has enabled it to support a significant research programme.

WHY STUDY PSYCHEDELICS?

The use of psychedelics to induce mood change, combined with cutting edge technologies, such as PET scanning, is helping to map brain states and improve our understanding of neurochemistry, brain anatomy and mood states. The psychopharmacology of psychedelics suggest that they affect cognitive processing, particularly in the way in which internal and external information is processed between the higher brain centres (frontal cortex) and ancient brainstem sites. Some brain changes are akin to those seen in states such as dreaming. Thus, psychedelics are likely to be useful tools in the study of cognitive and sensory processing.

Psychedelics are significantly different from other illegal psychoactive drugs and are probably some of the oldest psychoactive substances known to humankind; some have been used for thousands of years as part of religious rituals. Indeed, some argue that such substances may have triggered development of the earliest philosophies and theologies. Psychedelics also have different properties to other illegal drugs. Animals will self-administer amphetamines, heroin, cocaine and morphine, but they cannot be trained to self-administer psychedelic drugs. Nor do people administer these drugs in repetitive and dependent ways. This is because they do not stimulate the pleasure pathways in the brain, working instead on cognitive functioning and sensory processing.

PSYCHEDELICS AS A UNIQUE THERAPY

People have reported remission of obsessive compulsive disorder (OCD) as a result of taking magic mushrooms, peyote or LSD. This is particularly significant given that OCD is one of the most difficult psychiatric disorders to treat. The Heffter Institute is currently funding a clinical research study at the University of Arizona to look at whether psilocybin (which occurs naturally in "magic mushrooms") can help treat OCD.

There is a strong theoretical basis for believing that psychedelic drugs could help in the treatment of eating disorders, such as anorexia and bulimia. Patients with anorexia have a distorted body image and perceive themselves to be overweight. Psychedelics can change body image. A protocol has been developed at the University of Zurich to test the feasibility of using psilocybin to treat anorexia and bulimia.

The use of psychedelics to treat alcohol misuse has been extensively researched. The results have been inconclusive, and the methodologies are unsatisfactory. But there are indications that psychedelics could have a role to play in the treatment of substance disorders. The Heffter Institute is funding research at the St. Petersburg Centre of Addictions in Russia looking at hallucinogen-assisted psychotherapy in the treatment of alcohol addiction. The St Petersburg Centre has also completed a study of hallucinogen-assisted psychotherapy for the treatment of heroin addiction. The results are encouraging.

PSYCHEDELICS' ROLE IN PALLIATIVE CARE

Perhaps the most interesting therapeutic use of psychedelics is in the treatment of pain and depression among patients with terminal illnesses. Psychedelics appear to have an analgesic effect. Research conducted at the University of Chicago in the 1950s found that LSD was acutely as effective as opiates for the reduction of pain. More interestingly, a significant number of patients reported pain relief two or three weeks later, long after the drug had worn off. Some also said that their attitudes to death had changed. The most dramatic changes in mood and attitudes in dying patients have been reported in those that have a drug-induced mystical experience.

The Heffter Institute is funding a study of the effects of psilocybin on patients with terminal illnesses. The study leader is Dr. Charles Grob of the Harbor-UCLA Medical Centre. Participants are given one dose orally, and then placed in a room where they listen to powerful evocative music while wearing eye patches to block out distracting external stimuli. There is no intervention from a psychiatrist. So far this procedure has been carried out with four subjects. Patients have reported a drug induced 'mystical experience', which is characterised by a sense of unity, transcendence of time and space, a sense of awe and reverence, philosophical insight and the ineffability of the experience (that is, an inability to describe it adequately).

Professor Nichols played a short video tape of a recorded interview with one subject. She explained that when the psilocybin session began she 'felt this lump of emotions

welling up in front of me almost like an entity … and then it started to dissipate, and I started to look at things differently, and I think that is the beauty of being able to experience your own consciousness.'

Dave Nichols concluded by saying that psychedelics could be a powerful tool in the development of a better understanding of mind-brain interaction, personality and cognition. They provide treatment options for patients with terminal illnesses, and there are positive indications that they could be beneficial for conditions such as obsessive compulsive disorder and eating disorders, which are notoriously difficult to treat effectively. It is a travesty that there has been so little interest in research on their potential therapeutic benefits over the past 35 years.

KEY POINTS

There has been little research on psychedelics in the past 35 years, despite the fact that their mechanism of action and influence on cognitive processing may make them particularly useful neuroscientific research tools.

Psychedelics may be effective for the treatment of mental disorders, particularly those that are refractory to alternative treatments such as obsessive compulsive and eating disorders.

Psychedelics could have a role in drug and alcohol treatment.

There is a growing body of evidence to show that psychedelics may be highly effective in the treatment of pain and depression among terminally ill patients.

DISCUSSION

What about the religious/spiritual use of psychedelics? Historically, the use of psychedelic drugs has been in a religious context. There are interesting anthropological questions about why they have been important for the spiritual practices of many cultures. Professor Nichols felt that these drugs could have a role within societies that were bereft of spiritual values.

What about creativity? People have claimed that psychedelics can advance creativity, but there is currently a shortage of proper research.

The rise and fall of interest in LSD among psychiatrists was closely paralleled with that of Ecstasy. It was greeted with great enthusiasm, and then dropped. What are the prospects for future work on the therapeutic use of Ecstasy? Professor Nichols was involved in work on Ecstasy in the early 1980s. His focus had been on trying to create a drug which would have a similar effect, as it was highly unlikely that a controlled drug with its genesis in the street scene would ever be approved as a therapeutic agent. There is some evidence of beneficial uses of ecstasy in couples therapy, where it can loosen inhibitions, enabling couples to talk more openly and communicate better. Whether this has any long term therapeutic gains is a separate question. Again, the studies have not yet been done.

What about adverse reactions to psychedelic drugs? The incidence of adverse reaction has been extremely low in clinical trials. In the general population who have used these drugs, it is likely that the numbers who have experienced adverse effects are comparatively small but nonetheless significant. It is widely believed that where people have a pre-existing or latent psychosis, this can be triggered by psychedelic drugs. The only well-documented long-term effect is 'flash backs'. Otherwise the incidence of adverse reactions is very low and they have been greatly exaggerated. He stressed that he was not advocating open access to powerful psychoactive drugs, but supervised use - 'they should be used in a medical-scientific context, and under those conditions I think they are safe'.

COGNITIVE ENHANCERS: BLURRING THE BOUNDARIES

DR. JOHN MARSDEN
SENIOR LECTURER IN ADDICTIVE BEHAVIOUR, INSTITUTE OF PSYCHIATRY, UK.

'I find it astonishing and fascinating to watch TV commercials in California which invite viewers to consider whether they are suffering from mood swings and suggest they may need to petition their GP for a new product for treatment of bipolar disorder … and then the sales of these products rocket after the commercials'.
John Marsden

'There is a worrying picture in which there are a group of psychonauts out there, who are losing any sense of reality or balance in their consumption of smart drugs, and are at the mercy of drug interactions and possible side effects. This is a mass experiment, which I believe may be already under way'.
John Marsden

Professor Marsden invited the audience to fast forward twenty years and imagine they were reading the CV of the Chief Executive of a major company in 2030. It is not inconceivable that this could include details of a smart drug regimen, to provide a biometric indication of his competence. This may be far fetched but it is a reasonable supposition that patterns of substance use and misuse could be different in the future. Traditionally, drug culture has been associated with hedonism, but there is a growing body of drug consumers who wish to harness recent pharmacological advances, associated with the treatment of conditions like AIDS and dementia, to shore up and improve their cognitive functioning. It is possible to order a huge variety of 'off-label' smart drugs from on-line pharmacies.

SMART DRUGS: DEVELOPMENT AND DANGERS

As average life expectancies increase in the developed world, there will be continued momentum for pharmaceutical companies to develop drugs that enable us to enjoy an improved cognitive life in later years. Smart drugs would ideally arrest cognitive decline, but with no dependence liability, low toxicity, no negative physiological impact or problematic interactions with other drugs and, perhaps, no psychoactive effects.

Advancements in the treatment of mild cognitive impairments, such as depression and anxiety, and of more serious conditions, like dementia, should be welcomed. Cochrane reviews [thorough explorations of the evidence for and against the effectiveness and appropriateness of treatments in specific circumstances] have provided robust evidence for the effectiveness of many of the new drugs. However, there is a lot that we do not know about side effects and dependency potential. Mice given smart drugs in laboratory tests show improved neurocognitive functions, but also exhibit a greater sensitivity to pain. Dr Marsden had spoken to someone in California who was taking around 200 agents a day, and whose life was focused on ordering, consuming, re-ordering and cataloguing a range of drugs, and talking about his smart-drug repertoire.

SMART DRUGS AND TREATING SUBSTANCE MISUSE

The potential to use smart drugs in the treatment of substance misuse disorders is a particularly exciting area for current research. In the US, Steven Shoptow and colleagues at UCLA have conducted a phase one study of the use of hydergine and cabergoline in the treatment of cocaine dependency. There were improvements in the proportion of cocaine free urine tests over 12 weeks, particularly for cabergoline.

Another interesting new drug is modafinil, which promotes wakefulness, in a different way to amphetamines, and is licensed for the treatment of sleeping disorders. Interestingly, it has the opposite effects to cocaine in the withdrawal phase, and might therefore help people in the most difficult period of recovery from cocaine dependency, the first eight to 16 weeks of abstinence. Research conducted at the University of Pennsylvania has produced some promising data comparing the use of modafinil with a placebo in the treatment of patients with cocaine dependency. The numbers of cocaine-free urine tests over the first weeks were higher among the group who were given modafinil.

To conclude, there have been major advances in the treatment of age-related and other cognitive disorders, partly driven by a growing market for these products as life expectancy rises. There is a significant level of 'off-label' use, which cannot be realistically prevented in the age of the worldwide web. Professor Marsden's sense of the situation was that the market for 'off-label' sale of smart drugs would be small but profitable. It was unlikely that many people would want to tinker with their cognitive functions. A more likely pattern for the future development of this market would be that it would settle down following a period of experimentation. Generally, people will probably be satisfied with the ebb and flow of cognitive functioning, unless they have significant problems which they believe are impairing their lives. There is also the issue of unforeseen problems with these drugs - for example, the animal studies which suggest that they may be associated with a greater sensitivity to pain.

KEY POINTS

The emergence of 'smart drugs' could transform attitudes to drugs and patterns of consumption.

There is evidence that 'smart drugs' can be an effective tool in the treatment of substance misuse.

These are 'top down' drugs that have been developed by pharmaceutical companies to treat cognitive impairment, and have been subject to rigorous testing. However, there is evidence that some 'smart drugs' can have negative side effects - for example, increased sensitivity to pain - and that they may be used in dependent and pathological ways.

DISCUSSION

It was suggested that the market could be much larger, and that these drugs could potentially have a similar role in intellectual life to that of steroids in sport. Smart drugs would appeal to young people in professions like medicine, law and investment banking who were looking for a competitive edge. This could create a market for these drugs even if they were shown to have negative side effects. Dr Marsden agreed. This vignette of the Chief Executive in 2030 was intended to highlight the possibility that some people in competitive professions would conclude that they could not afford to not take these drugs. In California, there was a significant number of people in their mid-20s to early 30s who were very active consumers of these products, and who often used psychoactive drugs as well.

LSD and Ecstasy were initially hailed for their potential therapeutic benefits, but this was followed by a clamp down when their use was 'democratised'. Could this happen to smart drugs? Smart drugs are coming from the top down - that is, they have been developed by pharmaceutical companies and subject to rigorous safety assessments and efficacy studies. What is worrying is that people will use a whole array of these products, as well as recreational drugs, lose their sense of reality and balance, and be vulnerable to problematic drug interactions and unwanted side effects.

The Beckley Foundation would like to thank Marcus Roberts for his help in the preparation of the Proceedings Document for Day One of the 2005 seminar

Beckley Foundation
Global Drug Policy Seminar 2005

Day Two

The Beckley/Foresight Seminar on Future Policy Challenges

Tuesday, 22 November 2005

EXECUTIVE SUMMARY

At the invitation of Dr. Andrew Jackson, I was delighted to organise and host the *Beckley/Foresight Seminar on Future Policy Challenges,* the aim of which was to review, and it is to be hoped, to augment the excellent *Drugs Futures 2025* a report compiled by the *Foresight Programme on Brain Sciences, Drugs and Addiction*. Only by attaining a rational overview of these complex issues, can we hope that better decisions for the future will be taken. Such a rational debate should help us to consider how psychoactive substances can successfully be managed to minimise their harm, while leaving the door open to science to explore their potential benefits for the individual and society.

Foresight has rightly recognised that the 21st century will be the century during which psychoactive substances, including cognition enhancers and recreational drugs, will become a fact of life, and will need to be managed wisely. Although the current UN drug strategy is to reduce and, ideally, to eliminate illicit drugs, the stark reality is that the global market has continued to expand, year by year. Moreover, there is an increasing blurring of boundaries between categories of drugs, from medicinal agents to recreational substances.

Dr Andrew Jackson from the Foresight Programme introduced the day, noting that the current regulatory system does not match with scientific understanding of drug harms. He suggested that in future the use of drugs might become more sophisticated, and new developments could bring benefits, such as more effective treatments for drug misuse. However, he stressed the importance of vigilance over potential harms arising from the use of new drugs and their combinations.

Professor David Nutt from the University of Bristol emphasised the increasing understanding of the brain mechanisms involved in drug use and dependency. This has already led to new agents, with novel neuronal targets, which raise the possibility of more sophisticated treatments for harmful drug use. Future regulation will impact on the use of such agents, and of other novel categories of drugs such as cognition enhancers. Perhaps regulation will move towards a more person-centred approach, with less emphasis on prohibition, but this raises issues concerning societal perceptions of drug use and international conventions.

In a review of harm reduction, *Professor Gerry Stimson* from the International Harm Reduction Association highlighted some of the drivers of change in the way society uses drugs, including genomics and the potential to determine individual susceptibility to certain drug use. Such changes would impact on education and regulation, as well as raising issues of personal privacy. Although current regulations may be considered inadequate, Prof Stimson stressed the importance of a regulatory framework to control and develop new agents.

Professor Peter Reuter of the University of Maryland emphasised the importance of considering drug use in a social context as being subject to various influences.

Discussions on harm need to consider the total harm of drug use and of policies, including regulation, that are instituted to manage this.

Professor Robert MacCoun of the University of California addressed the question of why people use drugs. He stressed that any policy analysis should take account of the benefits that individuals experienced from drug use as well as the costs. However, taking account of subjective benefits can be problematic, and objections exist against doing so. Nevertheless, research to address the reasons why people take drugs is important as, for example, it could impact beneficially on drug prevention efforts.

One difficulty in the implementation of drug policies is gauging their effectiveness. *Professor Mark Kleiman* of the University of California raised concerns with the methodology used in evaluating new policies and treatment programmes, particularly where the prevalence of drug use among the general household population was used as an indicator of success. It was suggested that the homeless and those in prison would make better target populations for such evaluation studies, as these groups have a high risk of substance abuse.

Developments in our knowledge of neuroscience are having an impact on our understanding of learning and memory, according to *Professor Trevor Robbins* from the University of Cambridge. These efforts will continue to produce agents that can improve cognition in patients with disorders such as dementia, schizophrenia and attention-deficit/hyperactivity disorder. Drugs already available and those in development have also shown promise to enhance aspects of cognition in healthy individuals. However, individual cognitive enhancement is affected by numerous factors, and may have both positive and negative trade-offs.

Professor Barbara Sahakian of the University of Cambridge argued that while such agents could bring great benefits for patients, their use in healthy people raised ethical issues for individuals and for the whole of society. Such ethical issues are also raised by other new developments, including knowledge of genetic information and vaccination against drugs, as noted by *Dr Harold Schmidt* of the Nuffield Council on Bioethics.

In conclusion, *Professor Colin Blakemore of* the Medical Research Council called for a new, more flexible system of drug regulation, to take account of developments in scientific understanding. *Professor Charles Shuster* from the Wayne School of Medicine noted that policy is dependent on how the issue of drug use is conceptualised, with a wholly moralistic viewpoint precluding the rational application of evidence on such issues as minimising the harms of drug use. Such concerns were also inhibiting scientific research seeking to determine the possible benefits of recreational drug use, involving specifically cannabis and psychedelics. It can be argued that there is a biological disposition to drug use, and that human beings may have an innate urge to alter consciousness. The best that society can therefore do is to learn to manage the harms associated with drug use, while respecting the individual's freedom to make choices that do not harm others.

Amanda Neidpath

Synopses of Presentations

INTRODUCTION

The *Beckley/Foresight Seminar on Future Policy Challenges* was held on 22 November 2005, the day after the Beckley Foundation's *Global Drug Policy Seminar 2005*.

The session was introduced by Amanda, Lady Neidpath of the Beckley Foundation, who had organised the day at the invitation of Foresight. She stressed that despite the current UN drug strategy to reduce, and ideally to eliminate illicit drugs, the stark reality is that the global market has continued to expand, year by year. Against this background, the UK Government's Foresight programme has recognised that in the 21st century psychoactive substances, including cognitive enhancers and recreational drugs, are a fact of life, and need to be managed wisely.

The aim of the day was to review and, ideally, enhance the *Report on Brain Sciences, Drugs and Addiction*, produced by Foresight. The hope is that such a review would help to consider how psychoactive substances can best be managed to minimise their harm, and to explore their potential benefit for the individual, the community and society.

Lord Layard, Professor Emeritus of Economics at the London School of Economics, UK, and a member of the Foresight project stakeholder group, introduced the day. He was pleased that the project did not solely focus on recreational drugs and the problems of addiction but also on how we can benefit from better drugs for treating mental illness, and from cognition enhancers.

INTRODUCTION AND STRATEGIC CHALLENGES

DR. ANDREW JACKSON
UK GOVERNMENT OFFICE OF SCIENCE AND TECHNOLOGY
DEPUTY DIRECTOR OF THE FORESIGHT PROGRAMME

Dr Andrew Jackson spoke about the background to the Foresight project, which is run by Sir David King, the UK chief scientific advisor to government. He said that the aim of Foresight is to use scientific evidence to create challenging visions of the future that assist in forming effective strategies now. Foresight is science-based, and its conclusions are influential in government, business and the scientific community.

HOW WILL WE MANAGE DRUGS IN THE FUTURE?

For the Brain Sciences, Drugs and Addiction project, the question asked was how can we manage the use of psychoactive substances in the future to the best advantage of the individual, community and society? Jackson explained that the project's intellectual core was 15 State of Science Reviews, written by leading experts in every relevant field from genomics to history. These fed the 'horizon scan' written by the project's lead scientists to identify the evidence that would most impact on management of psychoactive substances in the future. The scenarios workshops were used to develop the possible futures which the project described, and to model the social impact of different psychoactive substances and related technologies. A series of discussion fora were then held with members of the public to gauge the reaction to various types of psychoactive substances and related technologies.

An overview of the project has now been published as *Drugs Futures 2025?*, which sought to outline the strategic choices that governments face and need to take decisions on. Understanding of the brain from a neuroscience perspective suggests that people will take psychoactive substances as long as chemicals exist that deliver either a relief from anxiety and stress, or that deliver pleasure or reward. So Jackson noted that any policy that assumes that we will stop taking recreational psychoactive substances is a strange policy indeed.

THE FUTURE OF DRUGS AND DRUG USE

In the future, Jackson suggested that traditional psychoactive substances such as heroin would still be available. However, new developments would likely include the emergence of drugs that might have fewer side-effects or offer a more personalised experience than those in use today. Personal drug use might therefore become more sophisticated, including the use of new combinations of drugs, such as stimulants combined with sedatives. Such combinations could increase known harms and have other unintended effects, but might also mitigate harms and be useful for treatment of harmful drug use. New drugs, including cognition enhancers, could also become useful for tackling addictions, most likely in combination with psychotherapies.

Jackson highlighted the fact that the current regulatory classification of drugs does not match with scientific understanding of the harms of such substances to the individual and society. He then pointed out that the way in which psychoactive substances are regulated in the future would depend on the aim of regulation, such as improving health, reducing crime or economic aims.

Other key issues Jackson highlighted were:

- Possible new treatments, including therapies and vaccines to remove the rewards from drug use, and the correct time to intervene.

- The emergence of cognition enhancers, and other drugs to enhance performance and other aspects of behaviour, such as confidence.

- A new awareness of the vulnerability to drugs of young and adolescent brains.

- The importance of surveillance and early responses to new drugs to reduce harms, and an understanding of the cultural context of changes in drug use, including whether social changes could reduce drug use.

- The roles of the pharmaceutical industry and government in developing new addiction treatments.

- The impact of genetic knowledge in shaping future drug use.

- The future role of drug testing.

- The rights of individuals surrounding drug use.

He concluded that the project's findings have been presented to audiences including four government ministers, and that the government has asked the Academy of Medical Sciences to follow up the project with a national review, including a public-engagement strategy.

KEY POINTS

The recreational use of psychoactive drugs is unlikely to go away, but addictions may become better managed through the use of genetic knowledge, vaccines, and new drugs and therapies.

In the future personal drug use is likely to be more sophisticated and will make use of drug combinations and new drugs.

The current regulatory system is inconsistent with the scientific understanding of the harms of drug use.

THE SCIENCE BEHIND THE FUTURE OF RECREATIONAL DRUGS

PROF. DAVID NUTT
PROFESSOR OF PSYCHOPHARMACOLOGY
UNIVERSITY OF BRISTOL, UK

Prof David Nutt, one of the project's science advisers, spoke on the project's findings, particularly how the boundaries between the various classes of drugs are becoming increasingly blurred. He pointed out that although existing illicit recreational drugs are controlled by the Misuse of Drugs Act, and drugs for illness by medical regulations, there is as yet no regime for the control of cognition enhancers, for which either route might be adopted. Three drugs also fall outside this system: coffee, tobacco and alcohol.

HOW NEUROSCIENTIFIC ADVANCES WILL IMPROVE OUR UNDERSTANDING OF HABITS AND ADDICTION

He said that within 20 years, we will understand the general rules of the mental processes underlying memory and learning. This might make it possible to produce methods to unlearn an addiction. In addition, we may have a genome profile of every newborn baby which would show up all the drug-related polymorphisms in an individual's genome and allow their susceptibility to drugs to be assessed. Those with susceptibility to particular drugs could theoretically be offered a vaccine against certain substances. There is also the potential to develop drugs to unlearn addictive behaviour but the pharma industry has expressed disinterest in their development, indicating a mismatch between scientific possibilities and actualities.

Advances in neuroimaging would allow the brain circuitry associated with drug liking and drug dependence to be understood, possibly aiding the development of new treatments. We already appreciate that the abundance of dopamine receptors is associated with pleasant or unpleasant reactions to drugs. Since many recreational drugs release dopamine, this circuitry seems to underpin the cycle of use leading to addiction. Genetic polymorphisms in dopamine receptors are also found to affect individual susceptibility to drugs and drug liking and this is also often the target on which drugs may act, exacerbating the cycle of drug dependence. Other receptor systems have been implicated in individual variations of drug effects. In animals, we also appreciate that stress and deprivation while young can affect a system's sensitivity and add to drug susceptibility. Specific enzyme variants that are particular to certain individuals can have implications for drug use too, such as those with the val-val polymorphism who perform better on mental flexibility tests whilst on amphetamines than those without this enzyme variant, who actually perform worse on amphetamines.

DEVELOPING NEW DRUGS: POSSIBILITIES AND LIMITATIONS

In the future, new drugs are likely to be available that target known and novel receptors, such as the cannabinoid antagonist rimonabant, which opens up the possibility of a new treatment for cannabis dependency and possibly heroin. Other possibilities are drugs that target the chemical mediators of stress and new agents that work on receptors not

yet identified. But the pharmaceutical industry might decide not to develop them because of the risk of stigma as well as regulatory confusion and the uncertainty of reimbursement. Challenges also exist in making progress on studies of the brain mediators of addiction as regulatory confusion has led to a lack of investment. There also remains a lot of hostility towards seeing addiction as an illness as many people still want to see it as a form of abhorrent behaviour. This has implications for funding basic addiction research, which faces profound practical challenges. Nevertheless, advances have been made with vaccines, with phase two clinical trials already underway for nicotine and cocaine.

The same problems also affect the possibility of recreational drugs being developed by the pharmaceutical industry. It is likely that our ability to develop agents to affect specific receptors in the brain will not be taken up by pharmaceutical companies. Prof Nutt posed the question of why a safer version of Ecstasy could not be made, given the 700,000 people who use the drug each weekend in the UK, and the known and potential harms of the drug. But he suggested that the drug would not be made or sold, because it would probably become illegal to do so. Alternatively, the gene for those few at risk of harm from ecstasy use could be identified. He also raised the possibility of a drug that could switch off the memory impairing effects of alcohol, or another agent – a benzodiazepine partial agonist - that would mimic the pleasurable effects of alcohol without the associated toxicity. This would also raise the possibility of being able to reverse its actions. But because it's a drug it would have to be regulated and sold as a treatment for an illness, though this would not be the best use of it because those who use alcohol recreationally would not have access to it.

FUTURE DRUGS AND DRUG REGULATION

Prof Nutt said that future drug control could involve a more person-centred approach and a less paternalistic government approach. What, for example, if we deregulated any drug safer than alcohol? He suggested the way forward may lie with more emphasis on education and less on prohibition. But this raised issues related to attitudes towards drugs in general and also international conventions on drugs.

Prof Nutt's presentation generated a lively debate. One issue that was raised was the question of safer versions of nicotine than tobacco, especially since nicotine has been found to enhance attention in healthy people and those with Alzheimer's. Prof Nutt pointed out that a safer version, known as snus, was only available in Sweden due to a European court ruling. He suggested that such safer versions were not available due to economic interests of the tobacco trade but also lack of governmental interest.

Asked whether the rewards of drug use can be separated from its loss of control, Prof Nutt said that the theoretical answer is yes, but that this might be difficult to achieve in practice as any highly pleasurable drug might become associated with addiction.

Asked whether there might be an effective anti-anxiety drug, he replied that there have been a number of false dawns but that some level of anxiety in society is a good thing. These examples highlighted the point that a future aim could be to enhance an individual's control of their drug use, which in turn highlights the question of how much

control should society have over an individual? One respondent noted that the public find it unacceptable for their rights to be withdrawn, except if there is a serious health hazard, such as with passive smoking, or after a major trauma, such as 9/11.

KEY POINTS

Cognition enhancers may come to be regulated as medicines or as drugs.

Advances in genetics, neuroimaging and neurochemistry combined could provide new options for the self-management of drug use and drug addiction.

The pharmaceutical industry could develop new drugs for reducing use-related harm but the current regulatory system, and particularly regulatory confusion over whether such substances would be drugs or medicines, militates against this.

HARM REDUCTION AND THE WIDER SOCIAL CONTEXT
SOCIAL, ETHICAL AND REGULATORY IMPLICATIONS

PROF. GERRY STIMSON
EXECUTIVE DIRECTOR OF THE INTERNATIONAL HARM REDUCTION ASSOCIATION AND DIRECTOR OF THE CENTRE FOR RESEARCH ON DRUGS & HEALTH BEHAVIOUR, IMPERIAL COLLEGE, UK.

DISCUSSANT
PROF. PETER REUTER
PROFESSOR IN THE SCHOOL OF PUBLIC POLICY AND THE DEPARTMENT OF CRIMINOLOGY AT THE UNIVERSITY OF MARYLAND, USA.

Prof Gerry Stimson was another of the project's science advisers. In his presentation, he praised the Foresight for its combination of vision, rigour and creativity, and the ability to freely discuss potential issues within the work of possible futures. He added that scientists are often poor at futures work and it would be worthwhile to have futures training more widely available to academics and others.

CHANGING PATTERNS OF DRUG USE

He pointed to drivers for change in the way society uses drugs, which include:

- Informatics – we might all have our genome information or medical history on an embedded chip, which could change the way in which healthcare providers interact with patients.

- New drugs, including cognition enhancers, and types of drugs and other technologies to alter experience not yet envisioned, such as transcranial magnetic stimulation. A new sensory industry may emerge that combines pharmaceutics and brain technologies with audio-visual media.

- Social change, such as the ageing population, producing more drug-experienced older people.

- Increased access to drugs through the internet.

- The performance culture, leading to use of cognition enhancers, and how this will relate to issues such as drug testing.

- The increased feasibility of home drug production. However, continuing geopolitical instability will mean the ongoing availability of plant-based drugs.

These pressures mean a need for better models of drug harm and use. There have already been steep increases in drug use, with opiate-related deaths increasing roughly 100-fold between 1968 and 2000, accompanied by large increases in the prevalence of

drug use. If we have a large drug economy in 2025, this will involve substantial harms, particularly to health and also the impact of a large illicit economy. Potentially, there could be 1 million problem drug users in the UK by this date.

New Approaches to Addiction and Controlling Drug Use

Prof Stimson pointed to other future challenges including vaccination against addiction, which will not offer lifelong protection from childhood, but will instead offer time-out to addicts. This may create some unusual and unintended consequences, allowing people to more easily cycle both in and out of drug use. In addition, he suggested that pharmacogenomic knowledge of our own drug susceptibility could impact on drug education and regulation, and he asked if blanket regulations would be unnecessary if the susceptible few could be identified.

He pointed out that current regulations are a mishmash, begging the question of how and why would the government regulate a drug that is not used as a medicine, is used for pleasure or enhancement, has few side effects and no addiction potential? In response to questions, he noted that new technologies, such as understanding the genomics of addiction, would allow earlier intervention to minimise harms but could also invade personal privacy, again raising issues of the infringements of rights of individuals and of society with such technologies. He emphasised the importance of regulatory frameworks, not only to control use, but potentially to allow certain agents to be developed.

How Harm and Drug Regulation Interaction

Joining the discussion, Prof Peter Reuter told the seminar that the Foresight report was valuable because it allowed policy to be seen in a social context and paid attention to the role of norms in determining harms rather than simply the effects of the drug itself, which is the thinking in the US. But it has the disadvantage of regarding regulatory structures as endogenous, without the context of the political economy and legal framework. He also pointed out that this report addresses issues that are simply taboo in the US and how impressed he was between the differences of what is possible in the US and the UK.

Reuter suggested that the report did not emphasise sufficiently our inability to predict the future, and he pointed out that drug markets are often very conservative and that access is a prime driver of misuse. However, other pressures exist on regulatory frameworks. For example, the issue of alcohol drinking hours had been reframed, so 24-hour drinking was a response given to mitigate a particular harm of drunken people leaving drinking establishments. Such pressures on the regulatory frameworks may fly in the face of scientific evidence, as in this case alcohol use and its industry were reframed as good for employment and were encouraged. He also made the point that, in the US, litigation rather than regulation was the eventual means by which tobacco advertising became restricted.

Reuter noted that harm reduction shares the issue of structural influences, although these are moral rather than economic with illicit drugs. He pointed out that harm

reduction focuses on harmfulness but must account for total harm, which is a consequence of the extent of use, and the average harm associated with use, further broken down into the number of people who use, how frequently they use, and the harmfulness per incident of use. Further, harmfulness can be manipulated in various ways, and trade-offs can occur with different measures. In some cases increasing access to substances can be beneficial, such as opening stores out of normal hours for homeless alcoholics to prevent them from drinking more dangerous substances.

Prof Reuter asked how large an illicit market would be acceptable compared with deaths prevented if tobacco was made illegal. With cognition enhancers, the key harm raised was the potential harm of creating a society where people would need to take such substances to stay level with the rest of the group. He suggested that there was no definite way to predict the long-term consequences in terms of intensity and length of use etc. with any new product.

KEY POINTS

There will be new regulatory and ethical challenges in the future with increasing drug use, drug availability, awareness, education and increasing self-sovereignty.

The development of novel drugs and technologies, particularly when combined, will have novel implications, such as the creation of new sensory industries.

The political economy and the legal framework are important as exogenous pressures for regulatory change, whereas moral objection is important as a pressure for regulatory stasis.

REGULATION AND UNDERLYING REASONS FOR DRUG USE
WHY DO PEOPLE USE DRUGS?

PROF. ROBERT MACCOUN
PROFESSOR OF LAW AND PUBLIC POLICY AT THE UNIVERSITY OF CALIFORNIA, BERKELEY, USA.

'There is a large literature on the "causes" of drug use, but these are mostly risk or vulnerability factors. There is a second literature, somewhat smaller, linking drug use to various harms and social costs. There seems to be a tacit agreement among drug policy analysts to ignore what users might consider the "reasons" for their use -- the pleasures and benefits they perceive. (The exception is addiction theory, but I will argue that that framing is misleading in other ways.) My talk is not a polemic; I am not certain that this is a devastating flaw in our thinking. But I will suggest that there might be sound analytic reasons for considering any benefits (both real and perceived) of psychoactive drug use, and that our interventions might improve as a result'.
Prof. Robert MacCoun

Prof Robert MacCoun asked why people use drugs, and specifically explored policy analysis to ask "when should benefits count" regarding drug regulation. Standard causes of drug use include factors that are biological, sociological, economic or psychological. He quoted other observers who say that the real question is why some people do not take drugs. He suggested that understanding the reasons why drug users take drugs can yield pertinent information. For example, he quoted William James' experiences with nitrous oxide, which not only demonstrated why users might take such a drug, but also illustrated the dilemma posed when we try to empirically evaluate benefits, which is the difficulty of distinguishing between the subjective benefit to the user and some objective indication of benefits.

WHY WE TAKE DRUGS: PERCEIVED BENEFITS & THEIR INFLUENCE ON POLICY

The benefits from drugs include pain relief and other effects of medicinal drugs, and he noted that psychedelic drugs might have a role in therapy, e.g., for addiction. However, he also noted that many users take drugs for self-transcendence and for the fun of intoxication, and that those seeking spiritual understanding feel they get it from their drug experiences. So, MacCoun suggested that evaluation of drug policy ought to weigh the benefits as well as the costs, but that judging benefits in this case could be problematic. Other views might take a moral line and suggest that all drug use is wrong, or might disregard benefits since they consider the key issue to be harms to others, or harms to vulnerable individuals such as minors. Even people who advocate drug legalisation tend to defend legalisation as a way of reducing harm, not for the benefits.
Objections to counting benefits in policy analysis include the fact that benefits were often immediate and costs delayed, e.g., with addiction. Nevertheless a lot of drug use is not addictive. With illicit drugs, benefits might be seen as the product of a crime and thus not allowable by comparison with other crimes, but this raises the question of whether drug use should be a crime. In considering harms to others, MacCoun suggested that some such harms of drug use were related to policy and illegal status rather than to drug use per se, although this did not necessarily suggest legalisation. Weighing benefits

might be discounted by the possibility that this would endorse drug use, but this assumed that current drug education messages were credible, when there is little evidence to support this assumption.

DRUGS AND HARM: INFLUENCE ON REGULATION & WHO SUFFERS THE MOST?

Further, MacCoun suggested that drug experiences might be perceived somehow as a way of entering a state of grace by cheating. In a thought experiment from *Drug World Heresies*, he asked the audience to consider the imaginary drug Rhapsodol that produces a short-lived state involving imagery and feelings of love, which disappears with any movement and so deters environmental and social hazards, and can only be used once a day. Would it be immoral? Should it be illegal? As one questioner said later, it sounds a lot like good sex, and thus demonstrated the point that the circumstances of drug use, as with sex, are important in determining acceptability. MacCoun felt that if all objective measurable harms were minimised then many people would soften their objections to drug use, though some would likely still insist that using the drug was wrong in principle.

He pointed out that the harms associated with current drug use are likely to be unevenly distributed and focussed on a few really heavy users. The distribution of harms for each drug is not known but it is suggested that lower levels of use may be much safer than heavy use. He also noted that current regulation does not match with two key aspects of drug harm that are independent of the frequency of use – dependence potential and safety margin for overdose. Consequently, drugs policy discussions should address substances separately rather than collectively. In response to questions, MacCoun suggested that asking drug users whether they regretted taking certain drugs might clarify issues of harms linked with dependency.

Ultimately, there may be advantages to acknowledging the benefits of drug use. One would be to indicate reasons why people are self-medicating and find safer agents to meet these needs. A better demarcation between harder and softer drugs might feasibly reduce progression to harder drugs. MacCoun noted that taking benefits seriously means testing for benefits with studies, such as research into the apparent medical uses of marijuana, which has long been blocked in the US. Testing benefits might also render drug policy more credible, with reduced demonisation of drug users and hypocrisy, which might overall improve drug prevention efforts.

KEY POINTS

Explanations of why people use drugs should include hedonic and transcendent gratification.

Cost benefit calculations need to honestly consider the benefits of drugs use, despite difficulties in measuring benefits objectively and the institutional resistance to conducting such research.

Harms associated with a drug vary with the level and context of drug use, which should be reflected in individual rather than collective drug policies.

IS EVIDENCED-BASED DRUGS POLICY POSSIBLE?

PROF. MARK KLEIMAN
PROFESSOR OF PUBLIC POLICY AT UNIVERSITY OF CALIFORNIA, LOS ANGELES, USA.

SUBSTANCE USE VS. ABUSE

Prof Kleiman iterated Prof Stimson's sentiment from yesterday that it would be better to have evidence-based policy making than policy-based evidence making, as is the current situation. Substance abuse policy should ideally seek to reduce the harmful consequences of substance abuse, and its success should be evidenced by real world outcomes. Substance abuse tends to be relatively rare and hidden whereas substance use is much more common and open. The homeless and the institutionalised are at high risk of drug abuse. However, surveying those who abuse substances is difficult and expensive compared to simpler surveys with household populations, which merely estimate the level of harm from the prevalence of substance use. Yet prevalence isn't a good proxy for the level of use or level of harm, and governments tend to use this measure. Consequently, evaluations of the need for policy change seldom target those in need of treatment.

PROBLEMS OF MEASUREMENT AND SCALING UP EXPERIMENTAL TREATMENTS

Considering other methodological problems, Prof Kleiman felt it more likely that measured changes over time in genuine substance abuse would be due to measurement error rather than a real change relevant to policy choices. Population-level trend management is possible in prevalence studies but sample size requirements make this research extraordinarily expensive and impractical for monitoring fluctuations in the short term. He suggested that the gap between the evidence that policymakers need and what scientists can deliver is too large to reconcile.

Experimental treatment studies also suffer from the difficulties of translating the findings from small groups to national programmes, or even from region to region. Furthermore, the programme evaluators are often the people who design the programme and so have a vested interest in its success. Treatment groups may also conform to expectations without adequate double-blind procedures, which are difficult to implement. Also, those successfully completing a treatment programme are likely to be successful in other respects, biasing results. Furthermore, five percent of programmes will return significant results by chance. Finally, journals tend only to publish positive results.

Whether a policy or programme is effective also depends on what phase of the epidemic the drug is at. Drug treatment is largely ineffective when a drug is in its early phase - when nobody is abusing the drug - whereas law enforcement may be effective early on but ineffectual when the drug is in its endemic phase. Further, it is speculated that positive drug tests and drug-use self-reports collected from those admitted to prisons

and emergency rooms would be more informative of the drug problem than general population surveys. Prof Kleiman ended by stating that we probably *should* be informing policy with evidence, but doubted our capacity to gather the relevant evidence.

KEY POINTS

Evidence relevant to the harms of substance abuse should look away from the general population and towards sub-populations where abuse is more concentrated.

Policy analysts and scientists need to be aware of methodological shortcomings when designing and responding to research evaluating drug policy.

BLURRING THE BOUNDARIES – THE FUTURE OF COGNITIVE ENHANCERS

PROF. TREVOR ROBBINS
PROFESSOR OF COGNITIVE NEUROSCIENCE AT THE UNIVERSITY OF CAMBRIDGE, UK

DISCUSSANT
PROF. BARBARA SAHAKIAN
PROFESSOR OF CLINICAL NEUROPSYCHOLOGY AT THE UNIVERSITY OF CAMBRIDGE, UK

The afternoon session began with a presentation by Professor Trevor Robbins, the third of the project's science advisers.

USING NEUROSCIENCE TO DEVELOP NEW DRUGS

He pointed out that neuroscience is now producing a wealth of new and interesting discoveries. These include our new awareness that new brain cells can develop in adults (neurogenesis) and that the brain can be altered by various new means, including growth factors, stem cells, and technologies such as deep brain stimulation and transcranial magnetic stimulation. Such developments, alongside drugs, offer possibilities for cognitive/performance enhancement, and thus may be subject to the same ethical and other considerations.

Numerous disorders represent possible targets for cognitive enhancement, from brain disease, such as stroke and dementia, through neuropsychiatric disorders, such as schizophrenia, and developmental disorders, such as attention-deficit/hyperactivity disorder (ADHD). Different approaches to improve symptoms in Alzheimer's disease are currently on the market or in clinical trials. Cholinergic agents such as nicotine have been shown to enhance sustained attention in patients with dementia and cicatrise inhibitors can be neuroprotective for those with an early diagnosis, but Prof Robbins suggested that these agents would not be considered as cognitive enhancers for the healthy population. However, increased understanding of the cellular and molecular processes that underlie learning and memory has led to interest in agents that modulate the glutamate receptor system, such as ampakines, that might improve consolidation of memory. Inhibition of the GABA inhibitory system is also showing promise.

MANIPULATING NEUROTRANSMITTER SYSTEMS TO IMPROVE PERFORMANCE

Another class of cognitive-enhancing drugs that are already in use includes Ritalin (methylphenidate), which is proven to reduce impulsivity in people with ADHD, and acts via dopamine and other classical neurotransmitters. Newly discovered neurotransmitter systems may prove fruitful targets for cognitive enhancement, such as

with the hypocretin agonist modafinil, which can act as a stimulant but also has beneficial effects on planning and working memory. Modafinil is also noted for its apparent lack of abuse potential.

The dopamine system, which is important in mediating reward and dependency, also has a role in various aspects of cognition and is affected in conditions such as Parkinson's disease and ADHD. Thus, agents that act via dopamine, such as L-Dopa and Ritalin, may also improve learning and working memory. Interestingly, neuroimaging has shown that cognitive enhancement with Ritalin is associated with reduced blood flow in the circuits that mediate working memory. Thus, it is possible that cognitive enhancement can occur by reducing the amount of effort required by the brain.

THE LIMITS ON COGNITION ENHANCEMENT

Also in these studies, the degree of cognitive enhancement was greater in those with a lower baseline ability. This suggests that such cognitive enhancement may be due to optimising performance, which would thus produce the greatest effects in subjects with the lowest levels at baseline. Further, such augmentation in individuals already at optimal performance levels might actually impair performance. Prof Robbins also noted that individual agents have differential effects on different aspects of cognition, so overall optimisation of cognitive function could be very hard. As seen with patients with Parkinson's disease, optimisation of one particular function could lead to impairments in others. Nevertheless, benefits to a particular cognitive function do not necessarily have a concomitant cognitive cost, as with modafinil. Individual drug effects can also differ according to dosage, individual genotype, situation and context.

Discussant Prof Barbara Sahakian pointed out that the potential benefits from cognitive enhancers are large from the point of view of people with cognitive impairment, such as dementia. However, it is important not to get complacent about harms, she said, noting that treatment for ADHD started as early as two years old in the USA and that many healthy people are already using cognitive enhancers.

BEYOND ENHANCEMENT

Increased interest is now being shown in drugs with the ability to help us forget. Such agents are being investigated for conditions like post-traumatic stress disorder. It has now been shown that during long-term memory retrieval, the associated biochemical processes become activated and so that memory becomes susceptible to modification. Manipulation of gene effects at this stage has been found to produce selective amnesia to a retrieved memory.

BRAVE NEW WORLD?

In considering the neuroethics of cognitive enhancers for use in healthy people, Prof Sahakian said that again it is a matter of how much society should have control over an individual versus individual freedoms. She noted that people are competitive and would want to benefit from the potential advantage offered by cognitive enhancers. Possible gains include better performance for people in critical roles such as air traffic control, or

for those under stress, such as when taking exams. Cognitive enhancers could potentially reduce disparity in schooling, for example. But while such drugs could provide some people with new opportunities, they will cost money and could increase inequality. They also may have long-term harms, including over-enhancement with excess memory storage. Widespread use might affect ideals of personal motivation or have the effect of homogenising society. There could be social pressure or coercion to use them, for example from employers or parents. She concluded that use of pharmacological methods to improve society should not preclude other means of improvement. Better cognitive enhancers used for brain disorders could provide great benefits for patients and for society, while pharmacogenomics could help with targeting drug use, but discussions on the emerging topic of neuroethics were important in order to explore the ethical and moral aspects of use in healthy people.

KEY POINTS

Mental impairments such as Alzheimer's disease have inspired research into cognitive enhancers, which may then be used by people without impairments.

Chemical cognitive enhancers have been shown to improve working memory in certain situations but may also cause impairments in other cognitive functions, and may only be truly effective in those starting from a low baseline.

There are increasing neuroethical considerations with the growth in use and availability of cognitive enhancers.

ETHICAL DILEMMAS
RIGHTS AND RESPONSIBILITIES

DR. HARALD SCHMIDT
NUFFIELD COUNCIL ON BIOETHICS, UK

DISCUSSANT
PROF. ALASTAIR CAMPBELL
PROFESSOR EMERITUS OF ETHICS IN MEDICINE IN THE SCHOOL OF MEDICINE, UNIVERSITY OF BRISTOL AND DIRECTOR OF THE CENTRE FOR ETHICS IN MEDICINE

The next speaker, Harold Schmidt pointed out that new drugs affect the freedoms and responsibilities of individuals and of the state. They raise questions of agency: is the person you meet "John", or "John on Ritalin"? Or with neurodegeneration, is the person you see today the one you knew before, either with or without medication?

NEW DRUGS, NEW PROBLEMS FOR REGULATION

This raises difficult questions about balancing the interests of people and society. For example, the role of the state could be anything from coercion and imprisonment to the provision of information. He quoted John Stuart Mill as saying that it is wrong to regulate individual foolishness unless it is harming someone else. But the state does have some softer roles, such as providing information for children who do not have detailed knowledge of drugs and their effects. He added that the philosopher Onora O'Neill has pointed to the fragility of concepts of individual autonomy. People have duties as well as rights, and different societies allow people different amounts of freedom.

Examples raised by the Foresight project include vaccination against addiction, which if it became practical might have issues if parents chose such an option for their children. Likewise the debate on cognition enhancers assumes that people are "better" if they are more competitive. Not everyone would agree with this position. Such drug use only improves life for the user if it coincides with her or his idea of improvement.

In the debate on his presentation, one speaker claimed that "recreational" drugs are those not for work, so that regulating them was wrong. Schmidt pointed out that regulation is meant to help make a better society, not necessarily a utopia. Another speaker pointed out that the whole of society bears the healthcare costs of problem drug use. The total cost is unknown but large. As another speaker said, the notion of harm varies from person to person but state intervention is needed both to ensure adequate information and to reduce harm.

KEY POINTS

Individuals have duties as well as rights.

Is it wrong to regulate individual foolishness unless it is harming someone else?

Drug use intervention by guardians, such as with vaccines, may preclude the right to choose.

CLOSING DISCUSSION

PROF. COLIN BLAKEMORE AND DR. CHARLES SCHUSTER

PROFESSOR COLIN BLAKEMORE IS THE CHIEF EXECUTIVE OF THE MEDICAL RESEARCH COUNCIL, UK

DR CHARLES SCHUSTER OF THE WAYNE STATE SCHOOL OF MEDICINE, IS THE EX-DIRECTOR OF THE NATIONAL INSTITUTE ON DRUG ABUSE (NIDA), US.

Prof Blakemore said that the meeting had opened up taboo subjects in a valuable way. The drug control regimes of the past 30-40 years had not been successful and it is now time to reassess them.

He identified a group of key issues:

- Many strongly-held opinions in this area are not based on evidence and better evidence is needed on the risks of recreational drugs.
- A new flexible system for drug classification should be based on the need for public protection.
- The blurred boundary between therapeutic and off-label drug use raises new problems.
- The boundaries between medicinal, illegal and cognition enhancing drugs is also ill-defined.

Dr. Charles Schuster expressed his interest in returning to review the impact of Foresight on UK Governmental policy in years to come. He noted that in the 1980s, when he took up directorship of NIDA, the US public's greatest concern was drug abuse, which was reflected in subsequent funding for research. In particular, crack cocaine and the intravenous spread of HIV infection spurred such concerns. At that time, policy was being made by various agencies that only considered supply reduction as appropriate, and ignored harm reduction, especially surrounding HIV, at a time when heterosexual transmission was denied. Schuster found that the debate over drugs was dependent on the way in which the problem was conceptualised. For example, an exclusively moral view of drug use suggested zero tolerance initiatives, which precluded the concept of needle exchange and other harm reduction initiatives. This led to contradictory policies and a tension between those who espoused supply reduction, demand reduction and harm reduction. Furthermore, harm reduction strategies were put in the paradoxical position of having to prove their effectiveness before they could be implemented. Evidence now suggests that different initiatives are appropriate for different stages of a drug abuse epidemic.

Dr Schuster pointed out that he shared, probably with many members of the audience, a history of having imbibed a variety of different psychoactive drugs, both legal and non-legal. He thought it important for people to be honest about this type of thing, particularly people in similar positions as his, as ex-director of NIDA.

Among issues he highlighted were:

- Cannabis for medical use. The anecdotal evidence is very strong and justifies controlled clinical trials. However, the concern among the administration is that if evidence suggests cannabis is sufficiently safe for medical use, it is thus safe for recreational use.

- The same applies to psychedelics for people with mental health disorders or terminal illness. In addition, psychedelics can be spiritually beneficial but it is essential to have the right set and setting for a psychedelic experience to be potentially beneficial and not harmful.

- Psychedelics can also enhance creativity by changing the way in which an individual perceives themselves and the world. There is a necessity to look at the potential long-term beneficial effects of drugs such as LSD.

- The difference between those drugs that humans and animals abuse and psychedelics, is that psychedelics are not self-administered by animals and are not addictive.

- Terminology: the term *illicit drugs* has salacious and moralistic overtones whereas the term *illegal drugs* is more neutral and necessary if we are to move away from a moralistic concept towards a public health concept of drug abuse. Drugs used for treating drug addicts should also be referred to as *medications*.

- The issue of personal liberty, not only for drug taking, but for infringement upon personal liberty by those who treat drug abusers e.g. new long-acting opiate formulations raise issues of whether drug addicts would have a genuine choice to use such agents or whether their use could be coercive.

Schuster stressed that harms associated with obsessive drug-seeking and taking are just as great as harms due to physical toxicity. While vulnerability to drug misuse can be associated with genetic inheritance, early environmental influences or psychiatric problems, there are also many constraints on drug use such as personal values or religion. Fundamentally, reward circuitry in the brain has been developed by evolution to ensure engagement with certain activities, such as eating, and these circuits are co-opted by addictive drug use. This biological predisposition is thus going to be expressed by a small but significant minority. It is therefore important to consider the least intrusive constraints to offer children and others, to prevent development of dependency and addiction. Ultimately, parental engagement with children and the provision of alternative activities to drug use might be more effective than regulation at governmental level. A respondent pointed out that despite the "war on drugs", it is still easier for a US teenager to buy cocaine than beer.

KEY POINTS

Better evidence of recreational drug use harm is needed to inform a more flexible drug regulation and classification system.

Drug supply reduction polices can work more harmoniously with demand reduction and harm reduction policies by recognising the different stages of a drug abuse epidemic.

Research into the therapeutic potential of cannabis and psychedelics should be welcomed if policy is to move away from a moralistic conception towards a more evidence-based public health conception of drug abuse.

There are both genetic and environmental factors in the genesis of drug abuse but ultimately parental engagement with children and the provision of alternative activities to drug abuse may be more effective than governmental regulation.

The Beckley Foundation would like to thank Martin Ince for his help in the preparation of the Proceedings Document for Day Two of the 2005 seminar

EPILOGUE

DRUGS AND THE FUTURE
BY DR. CHARLES R. SCHUSTER

The use of psychotropic drugs to modify sensation, perception, mood, and behaviour has been ubiquitous in human societies since time immemorial. Alcohol, caffeine, coca, nicotine, opium, peyote, marihuana, mescaline and many other substances have been used in a variety of cultures in the world for religious ceremonies, healing by shamans, or as a brief escape from the rigors of a difficult existence. The scientific development of safe and effective psychotropic drugs for the treatment of psychiatric and neurological disorders is, however, a relatively recent phenomenon. Only in the past fifty years have we developed highly specific and effective drugs for the treatment of neurological and psychiatric disorders. Progress is being made in our understanding of the pathophysiology of neurodegenerative and psychiatric disorders, including substance abuse and dependence.

Coincident with these significant therapeutic gains, we are learning more about the fundamental neural mechanisms underlying cognition, motor function, perception, motivation, and mood states. Unquestionably, we will see continued progress in our understanding of the aetiology of neurological and psychiatric disease states and, hopefully, in the development of ways to prevent and more effectively treat these problems. In so doing we will inexorably discover new means to alter our mood, perceptions and cognition. I am very excited to participate in the review of the United Kingdom's Foresight Program, sponsored by the Office of Science and Technology, which is trying to anticipate the policy issues these new discoveries will engender. The Beckley Foundation has performed an extremely valuable service by organizing this meeting of policy and scientific experts to evaluate and consider the Foresight Report on *Drugs and the Future: Brain Science, Addiction and Society*. Their insights will hopefully provide useful guidance for the development of future policies in this complex and often contentious area.

We have in the past generally discounted the possibility that psychotropic agents might be useful for improving normal performance. Extensive research has demonstrated that certain medications can enhance cognitive and motor task performance that has been degraded by fatigue or boredom. The United Sates Department of Defense for example, sanctions the use of such drugs for pilots who must remain on duty for extended periods of time. Now, however, we are faced with the likelihood of discovering new psychotropic agents that will augment the optimal performance of non-disordered individuals, allowing them to work not only longer, but also more efficiently and productively. It is also likely that we will develop – through rational design or serendipity – psychotropic agents that can enhance such human qualities as empathy, sympathy, spirituality, and compassion. Psychotropic drugs have been used by many to enhance creativity, with mixed results. Undoubtedly, as we continue mainstream development of psychotherapeutic agents, new "psychedelic" agents will also be

discovered. This will also force us to give serious reconsideration to the manner in which we view the use of currently available "psychedelic" agents that in most countries are banned as illegal drugs. Could these compounds and ones yet to be discovered lead to more creative thinking in the arts and sciences? Could they increase spirituality and feelings of compassion for the less fortunate? If they do, how will or should these agents be sanctioned and regulated?

What will all of this mean to future generations? Great promise, but the potential for unintended adverse consequences as well. I believe that the following ethical and procedural issues must be considered in sanctioning the development and distribution of psychotropic agents that enhance normal performance and/or other desirable human qualities. First, I am concerned about access to such psychotropic agents. Will they be prescribed by physicians? How will physicians decide for whom they will prescribe such psychotropic agents? How will they be paid for? If only individuals who can afford to pay for these agents can access them, are we further separating individuals by socio-economic level? Are we in danger of creating a modern-day equivalent to a behavioural eugenics movement or a caste system? Further, will ambitious young workers escalate their use of such agents in an attempt to better compete with their peers? The current furore over the use of performance enhancing anabolic steroids by athletes in the United States portends some of the problems we will have with "steroids for the mind." Finally, what will happen to one's sense of satisfaction for a job well done if the successful performance is at least partly attributable to a pill? If increased compassion or empathy can be achieved by ingesting a psychotropic agent, will this alter our veneration for these human attributes?

I do not mean to diminish the possible benefits that might accrue from new psychotropic agents for enhancing normal performance and other desirable human qualities. It seems conceivable that, if an entire population received a psychotropic agent that boosts memory function, we would not equalize individual differences but rather increase the population mean for memory function. This characteristic could be true for all of the human mental functions that psychotropic agents might enhance. This is, of course, a utopian view, but conceivable. Unfortunately, the reality is that such agents would be disproportionately available for the wealthier nations' populations, potentially further widening the socio-economic gap between nations of the world.

I think the Beckley Foundation meeting for the review of the Foresight Program has done us all a great service by forcing us to consider and debate these issues. As is true with all medications, fashioning rational policies requires that we balance the risks and benefits of these agents for the individual and society in general. In that regard, I believe we must also seriously consider alternatives to psychotropic agents for enhancing normal performance. Much can be achieved using educational and other behavioural approaches to enhance our mental performances.

Clearly, we can also do a better job of nurturing the human qualities of empathy, compassion and spirituality by means other than psychotropic agents, probably at lower cost and with reduced likelihood of adverse side effects. Nevertheless, we should not prejudge the potential benefits of psychotropic agents for purposes other than treatment of disease. Whether we oppose this application of psychotropic drugs based on ethical

principles, they will be developed. Once developed, it will be difficult to contain their distribution and use. It is far better that we begin our public discourse now on policies to productively use these agents rather than wait until they are here. The presentations at this Beckley Foundation meeting to review the Foresight Report are an excellent start.

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Wayne State University School of Medicine
Former Director of the US National Institute on Drug Abuse

Beckley Foundation
Global Drug Policy Seminar 2005

Day Three

Developing Two Organisations Founded by The Beckley Foundation:

The International Society for the Study of Drug Policy
And
The International Drug Policy Consortium

Wednesday, 23 November 2005

DEVELOPING THE ISSDP AND THE IDPC

One of the emergent themes of the Beckley Foundation's seminar series is that, despite a growing weight of evidence highlighting the inadequacy of current drug regulations, efforts to reform drug policy are hampered by a lack of co-ordination amongst those individuals and organisations who advocate for both more scientific evaluation of drug policy, and the implementation of a more evidence-based drug policy. At the 2004 Beckley Foundation Drug Policy Seminar therefore, the directors of the Beckley Foundation Drug Policy Programme (BFDPP), Amanda Neidpath and Mike Trace, held initial meetings to discuss the establishment of two networks, one of policy-analysts and academics, and the other of NGOs working in the drug policy field. The outcome of these meetings was very positive and resulted in the formation of:

- An informal network of senior academics from around the world, active in the field of evaluating and analysing the effectiveness of drug policies. Prof. Peter Reuter was asked to chair this organisation, which he kindly accepted.

- A consortium of many of the NGOs working around the world in the drug policy field, to be chaired by Mike Trace. It was agreed that members of this consortium would work together to promote evidence-based drug policies to governments and international agencies.

To build on these promising foundations laid in 2004, the third day of the 2005 Beckley Foundation Seminar was dedicated to concurrent meetings to formalise and promote the way in which the *Society* and the *Consortium* would build their identities, expand their networks and formulate how they would function. These meetings also provided an opportunity for participants to present their recent work, discuss the most pressing areas for future research, and establish how these organisations could most effectively pursue their aims. As outlined in the updates below, these fledgling organisations, initially founded as part of the Beckley Foundation, have now developed into highly respected, independent international networks, whose advice is sought by national and international governments alike on all areas relating to drug policy. They continue to work closely with the Beckley Foundation in developing and promoting drug policies that minimise the harms associated with drug use.

INTERNATIONAL SOCIETY FOR THE STUDY OF DRUG POLICY (ISSDP)

This meeting of the International Network of Drug Policy Analysts, convened by the Beckley Foundation as part of the 2005 Seminar, was attended by many of the leading drug policy analysts from around the world. The day started with a series of presentations on some of the key policy questions that had been identified as needing further research and analysis, if policymakers were to have useful guidelines for effective policy. These presentations were used as the basis for network members and invited guests to discuss a forward program of research that would provide the

necessary answers to these policy questions. At the end of the day, discussions were held on how to develop the network, what its goals should be, and how its findings should be presented and distributed. During this discussion, it was decided to retain the original aims, members and Peter Reuter as its chair, but to rename the organization the *International Society for the Study of Drug Policy* (ISSDP) and that it would be better if the organization was seen to be independent from the Beckley Foundation. It was also agreed that the ISSDP, together with the Beckley Foundation, would continue working on the development of an online bibliography to help analysts locate recent policy-relevant articles and reports, and keep abreast of the fast expanding and cross-cutting literature on various aspects of drug policy. This service is available on the ISSDP website: www.issdp.org, as well as the Beckley Foundation website: www.beckleyfoundation.org.

The aims of the ISSDP are therefore to:

- Develop relations among leading analysts and thus strengthen the field.
- Be a forum for high quality drug policy analysis.
- Develop the scientific base for policy decisions.
- Improve the interface between researchers and policy makers.

Since the 2005 Seminar, the ISSDP held its first independent meeting in Oslo in March 2007, and has now established a formal structure through which academics can discuss potential collaborative work and present their findings. The network is to hold a symposium each year to provide a platform for the best and most recent research and analysis in the field. The 2008 Symposium is scheduled for April in Lisbon.

The ISSDP Coordinating Committee is chaired by Professor Peter Reuter of the University of Maryland, USA. Its Vice-President is Alison Ritter, Associate Professor at the National Drug and Alcohol Research Centre, Australia. The other Committee members are Henri Bergeron (Senior Research Fellow at The French National Centre for Scientific Research), Sandeep Chawla (Head of Research and Policy Analysis at the United Nations Office on Drugs and Crime), Christine Godfrey (Professor of Health Economics at the Department of Health Sciences and Centre for Health Economics at the University of York, UK), Keith Humphreys (Associate Professor of Psychiatry at Stanford University and a Career Research Scientist in the U.S. Department of Veterans Affairs), and Pia Rosenqvist (Head of the Nordic Centre for Drug and Alcohol Research).

ISSDP members are regular contributors to the Beckley Foundation reports and seminars on drug policy. Through their diligent and careful research and analysis, the ISSDP complements the Beckley Foundation and its goal of promoting evidence-based drugs policy that are more effective in minimizing the harms associated with the use and misuse of drugs.

INTERNATIONAL DRUG POLICY CONSORTIUM (IDPC)

By the time of the 2005 seminar, the IDPC had been in existence for almost a year, and had already been involved with specific projects for the UN and EU, as well as providing advice on drug policy issues to the Governments of Ireland, Portugal and Russia. As the scope of this consortium expanded, it became clear that, in order to maximize the efficacy with which the consortium worked, it was necessary to hold a meeting to discuss a more formal structure and operating system. This was achieved through the meeting at the Beckley Foundation Seminar of 2005, which formalized the IDPC as a credible, global NGO network that would engage constructively with governments by providing policy-makers with a 'critical friend' analysis, and realistic proposals of how dilemmas in drug policy and programme formulation could be resolved.

The early experience of the IDPC has been encouraging, with politicians and officials keen to engage with the consortium, particularly when it was able to offer access to expertise the policy-makers did not have. Less than three years on, this network has become the most respected source of independent strategic advice to governments on national and international drug policy. It currently has 26 members incorporating a wide range of expertise and consisting of NGOs and professional networks that cover 7 continents. Its stated aims are to promote objective and open debate on the effectiveness, direction and content of drug policies at national and international level, and to promote the adoption of evidence-based policies that are effective in reducing drug-related harm. Based on the findings of its members' research and publications, amongst other sources, the Consortium engages with officials and politicians in national governments and international agencies, to help promote effective policies, through correspondence, face-to-face meetings and involvement in conferences and seminars. It thereby makes available to policy makers the most up-to-date research and practical knowledge.

Over the course of 2008/9, the IDPC will be particularly focused on the United Nations 10-year review of global drug policy (UNGASS), which will conclude with a high-level political meeting in Vienna in 2009. The IDPC will be producing and distributing a series of key documents that incorporate constructive recommendations for a positive outcome from this review. The Consortium has also taken on a coordinating role in which information about the progress and content of the review is collated and disseminated to all interested parties around the world through its 'Advocacy Guide'. The latest version of this guide, together with all other reports of the IDPC and a list of its constituent members, can be downloaded from its website, www.idpc.info, and is also accessible via the Beckley Foundation's website: www.beckleyfoundation.org.

Appendices

I. Development of a rational scale to assess the harm of drugs of potential misuse
II. Biographies of Speakers
III. Participants Attending Seminar V

ARTICLE IN *THE LANCET* 2007: *369*, 1047-1053,

DEVELOPMENT OF A RATIONAL SCALE TO ASSESS THE HARM OF DRUGS OF POTENTIAL MISUSE

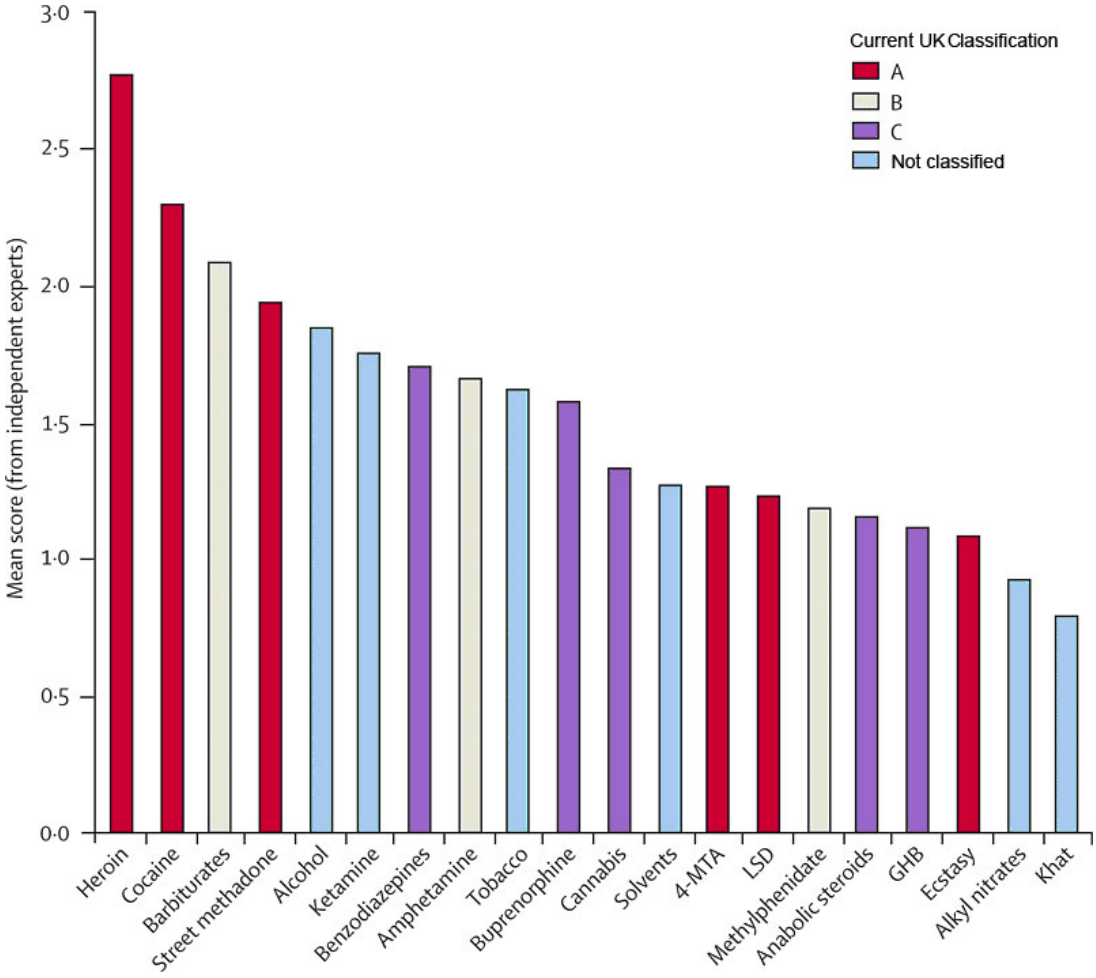
A particularly important outcome of the Beckley Foundation seminar series was its role in the development of the seminal article in *The Lancet* outlining an evidence-based alternative to the thoroughly unsatisfactory drug-classification system in the UK.

A recurring theme of the Beckley Foundation seminars has been highlighting the haphazard and inflexible nature of the current classification system for illegal drugs, which often bears little relationship to the real harms of the different substances, and omits any comparison with legal and prescribed drugs, which can be even more dangerous to their users and more costly to society. Indeed, as the Government's own Science and Technology Committee's report, '*Drug Classification: making a hash of it*' concludes:

"The classification system, purports to rank drugs on the basis of harm associated with their misuse, but we have found glaring anomalies in the classification system as it stands and a wide consensus that the current system is not fit for purpose…The problems we have identified highlight the fact that the promised review of the classification system is much needed and we urge the Government to proceed with the consultation without delay. We have proposed that the Government should develop a more scientifically based scale of harm, decoupled from penalties for possession and trafficking. In addition, we have argued that there is an urgent need for greater investment in research to underpin policy development in this area."

The *Lancet* article has its roots in the talks given by Professor Colin Blakemore at two of the Beckley Foundation seminars: *An Interdisciplinary Perspective on Alcohol and Other Recreational Drugs*, held at Admiralty Arch, in collaboration with the Cabinet Office Strategy Unit, in 2003, and the *Global Drugs Policy Seminar* at the House of Lords in 2004.

This influential paper in *The Lancet* put forward a new scale of drug-related harms based upon the comparative classification of twenty substances. The paper, co-authored by Prof. Colin Blakemore and Prof. David Nutt, *et al.*, presents a scale of harms based on three scales – physical harm, dependence and social harm - which were independently assessed by two groups of experts from the fields of chemistry, pharmacology, forensic science, psychiatry and other medical specialties. The results, as shown below, are that the new scale of harm is quite inconsistent with the ABC drug classification system currently in use in the UK.



The Graph shows the overall mean scores of the independent expert groups, averaged across all scorers, plotted in rank order for all 20 substances. The classification of each substance under the Misuse of Drugs Act is also shown. Although the two substances with the highest harm ratings (heroin and cocaine) are class A drugs, overall there was a surprisingly poor correlation between the drugs' class, according to the Misuse of Drugs Act, and the harm score. This discrepancy is highlighted by the fact that amongst both the eight most dangerous and the eight least dangerous drugs, three are rated as Class A and two are unclassified. Alcohol, ketamine, tobacco, and solvents (all unclassified at the time of assessment) were ranked as more harmful than LSD, ecstasy, and its variant 4-MTA (all currently class A drugs).

This system of classification, based on the scoring of harms by experts, on the basis of scientific evidence, has much to commend it and has long been recommended by the Beckley Foundation. This approach provides a comprehensive and transparent process for the assessment of the danger of drugs. The system is rigorous and involves a formal, quantitative assessment of several aspects of harm. It can easily be updated as knowledge advances**.** This system could therefore be usefully developed to provide an evidence-based approach to drug classification. The new scale and the methods employed in its development offer a systematic framework and process that could be used to aid in decision-making by regulatory bodies.

BIOGRAPHIES OF SPEAKERS

MAIN SEMINAR

MONDAY, 21 NOVEMBER 2005

CHAIR (MORNING)

DAME RUTH RUNCIMAN

Dame Ruth Runciman chaired the Independent Inquiry into the UK's Misuse of Drugs Act. She was a member of the Statutory Advisory Council on the Misuse of drugs for twenty years. She currently chairs a National Health Service Trust which provides drug treatment services to a large area of London.

CHAIR (AFTERNOON)

PROFESSOR COLIN BLAKEMORE
MEDICAL RESEARCH COUNCIL

Prof. Colin Blakemore is the Chief Executive of the Medical Research Council (MRC), the Waynflete Chair of Physiology, University of Oxford, and Director of the Oxford Centre for Cognitive Neuroscience. He has also been President and Chairman of the British Association for the Advancement of Science. He has won numerous prizes and medals from medical and scientific academies and societies including the Royal Society Michael Faraday Prize for furtherance of the public understanding of science. He has been President and Chairman of the British Association for the Advancement of Science, President of the British Neuroscience Association, and of the Physiological Society and the Biosciences Federation. He is a frequent broadcaster on TV and radio, a Reith lecturer, and he has published numerous books and academic articles.

SPEAKERS

DOCTOR ANINDYA CHATTERJEE

JOINT UNITED NATIONS PROGRAMME ON HIV/AIDS (UNAIDS)

Anindya Chatterjee has provided leadership in policy and programme development in the area of health, development, drug control and HIV/AIDS over the last two decades. He has worked with the United Nations, government authorities, NGOs, research and international agencies. He has lived and worked in Bangladesh, India, Iran, Myanmar, Nepal, Switzerland, Thailand, USA and has been closely involved with national HIV/AIDS, health, development and drug control programmes in several countries of the world.

He currently coordinates the prevention team of the Joint United Nations Programme on HIV/AIDS (UNAIDS) based in Geneva. His specific areas of expertise include development of HIV prevention and care programmes for vulnerable populations, HIV situation analyses, public policy research and advocacy. He also has extensive experience in training different civil society and other groups in various aspects of health care. He has helped pioneer health and development programmes for poor and marginalized populations,

developed several pioneering outreach and needle-exchange programmes within Asia, developed guidelines for rapid assessment surveys and founded a mental health NGO in India. He has authored several articles and books. A recently edited book entitled 'Living with the AIDS virus: the epidemic and the response in India' has been published in India.

He graduated in medicine in 1983 and subsequently obtained doctoral degree in psychiatry and post-doctoral training in anthropology and public health in India and US.

PROFESSOR LESLIE IVERSEN
UNIVERSITY OF OXFORD

Leslie Iversen PhD is a Visiting Professor at the Department of Pharmacology, University of Oxford. He directed the Wolfson Centre for Research on Age Related Diseases at Kings College London (1999-2004), and was previously Director of the Neuroscience Research Centre set up by the international pharmaceutical company Merck & Co Inc in Harlow, Essex, UK (1983-1995), and Director of the UK Medical Research Council Neurochemical Pharmacology Unit in Cambridge, England (1970-1983). He is interested in understanding how drugs work in the nervous system and in the molecular basis of nervous system disorders and is particularly known for his work on the chemical messengers used for communication between nerve cells. He is the author of several books and of more than 350 scientific publications and is a Fellow of the Royal Society of London and a Foreign Associate of the National Academy of Sciences, USA. He acted as the specialist adviser to the House of Lords Science & Technology Committee's enquiry into Cannabis, 1998, and is currently a member of the Home Office Advisory Council on the Misuse of Drugs. His most recent books are "Speed, Ecstasy, Ritalin: Use and Abuse of Amphetamine", Oxford University Press, 2006; "A Very Short Introduction to Drugs", Oxford University Press, 2001; and "The Science of Marijuana", Oxford University Press, 2000.

ROB KAMPIA
MARIJUANA POLICY PROJECT

Rob Kampia is co-founder and executive director of the Marijuana Policy Project (MPP), the largest non-profit organization in the U.S. that is solely dedicated to ending marijuana prohibition (with an emphasis on removing criminal penalties for the medical use of marijuana). MPP has established itself as the leading organization to call for the repeal of marijuana prohibition in Congress.

Kampia helped draft most of the medical marijuana laws that have been enacted in ten states, and has testified before legislative committees in California, Maine, Maryland, Massachusetts, Nevada, Ohio, Vermont, and Washington state. In March 2001, Kampia testified before a subcommittee of the U.S. House of Representatives on the medical marijuana case that was pending before the U.S. Supreme Court at the time.

PROFESSOR MARK KLEIMAN
UCLA

Mark A. R. Kleiman is Professor of Public Policy and Director of the Drug Policy Analysis Program in the School of Public Affairs at UCLA. His research focuses on drug policy and crime control, and he is widely identified with the proposal to institute frequent drug testing and automatic sanctions for drug use for drug-involved offenders on probation and parole.

Prof. Kleiman is also the editor of the Drug Policy Analysis Bulletin and the Chairman of BOTEC Analysis Corporation, which provides policy advice to governments at all levels on the issues of drug, crime and health. He is the author of two books, and is currently working on a third. He also publishes a weblog at http://www.markarkleiman.com.

In addition to his academic work, Prof. Kleiman serves as a policy adviser on drug problems to various government entities. He has recently published a report for the Congressional Research Service on the link between terrorism and the illicit drug trade.

Before joining UCLA, Prof. Kleiman taught at Harvard's Kennedy School of Government, where he received his Ph.D. in Public Policy. From 1979-1983, he served in the Office of Policy and Management Analysis of the Criminal Division of the United States Department of Justice, first as Deputy Director for Drug Control Programs and then as Acting Director and Director.

DOCTOR JOHN MARSDEN
INSTITUTE OF PSYCHIATRY

John Marsden Ph.D. is a chartered clinical research psychologist and senior lecturer in addictive behaviour at the Division of Psychological Medicine, Institute of Psychiatry, King's College London. He is a member of the Advisory Council on the Misuse of Drugs and Regional Editor for Europe, Asia and Africa for the journal Addiction. John has research interests in treatment evaluation with a current focus on cocaine (in the U.K) and methamphetamine (in the Asia Pacific region).

PROFESSOR DAVID E. NICHOLS
PURDUE UNIVERSITY

Professor David E. Nichols, Ph.D., is Professor of Medicinal Chemistry and Molecular Pharmacology at the Purdue University School of Pharmacy and Pharmaceutical Sciences in West Lafayette, Indiana. He is also an Adjunct Professor of Pharmacology and Toxicology at the Indiana University School of Medicine. His unique research spans a continuum, from computer-assisted drug design and chemical synthesis, to in vitro and animal pharmacology, giving him a very broad perspective on biomedical research that is quite unusual.

He has published more than 250 scientific papers and book chapters, is the holder of seven U.S. patents, and has been an invited speaker at numerous national and international symposia. His research has been continuously funded by the NIH for nearly three decades. He has served on numerous governmental study sections, advisory boards, and review panels, and serves as a consultant to the pharmaceutical

industry. He was named a fellow of the American Pharmaceutical Association, a fellow of the American Association of Pharmaceutical Scientists, and was elected to membership in the American College of Neuropsychopharmacology. In 2004 he was named the Irwin H. Page Lecturer by the International Serotonin Club.

Professor Nichols has been studying hallucinogenic drugs since 1969, and is considered by many scientists to be the world's top authority on the chemistry and pharmacology of these substances. He is also the founding president of the Heffter Research Institute, a not-for-profit organization incorporated in 1993 to encourage and support rigorous scientific studies of the medical potential of psychedelic agents. In addition to his work on hallucinogens, he also has been a world leader in the research of novel dopamine D1 agonists to treat Parkinson's disease, and to treat the cognitive and memory deficits of schizophrenia. He was the scientific cofounder of a small biotech company to commercialize these therapeutic agents, which are now in Phase II clinical studies.

DOCTOR MARCUS ROBERTS
MIND

Marcus Roberts is Head of the Policy and Parliamentary Unit at Mind, the mental health charity. From 2002 to September 2005, he was Head of Policy at DrugScope, and a key author of Beckley reports and briefings. Before working at DrugScope he was senior policy adviser at Nacro, the crime reduction charity. He edited the journal Childright from 1998 to 2000 and the magazine Safer Society from 2000 to 2002. In 1994 he was Baring Foundation Fellow in Human Rights at the University of Essex, and subsequently taught in the Philosophy Department at Essex for three years, working closely with the Human Rights Centre. He has published numerous policy reports, articles and briefings on a wide range of social policy issues.

DOCTOR ALEX STEVENS
EUROPEAN INSTITUTE OF SOCIAL SERVICES

Alex Stevens works for the European Institute of Social Services at the University of Kent. He is the principal author of the Beckley Foundation report (number 5) on Reducing Drug-Related Crime. He currently leads QCT Europe, a six-country research project on treatment for drug dependent offenders. He has a long-standing interest in drugs, crime and the penal systems of Europe. Before joining EISS in 1998, Alex managed the European Network of Drug and HIV/AIDS Services in Prison at Cranstoun Drug Services.

PROFESSOR GERRY STIMSON
INTERNATIONAL HARM REDUCTION ASSOCIATION
& IMPERIAL COLLEGE LONDON

Gerry Stimson, PhD, is Executive Director of the International Harm Reduction Association. IHRA is a global advocacy organisation which promotes a harm reduction approach to the use of legal and illegal psychoactive drugs. He is also Emeritus Professor of Sociology at Imperial College London.

He has nearly 40 years of research on drug and alcohol issues. He directed the Centre for Research on Drugs and Health Behaviour from 1990 until 2004, with a programme of research on reducing harms from drug and alcohol use including the evaluation of methadone and heroin prescribing, syringe exchange, surveillance of HIV and other blood borne infections, drugs in prisons, and prevalence of drug use.

He has over 200 academic publications. He has advised the UK government, the World Health Organization, UNAIDS, and the United Nations Office on Drugs and Crime, on drugs and HIV/AIDS. He is editor-in-chief of the International Journal of Drug Policy.

PROFESSOR FRANCISCO THOUMI
UNIVERSIDAD DEL ROSARIO

Francisco Thoumi is currently a Professor of Economics and the Director of the Research and Monitoring Centre on Drugs and Crime, Universidad del Rosario, Bogotá, Colombia. He is also a member of the Board of Directors of the Colombian Economics Academy.

From August 1999 to September 2000, he was the research coordinator for the Global Program against Money Laundering, United Nations Office of Drug Control and Crime Prevention. He was the regional coordinator for the United Nations research program on the economic effects of the illegal drug industry in Bolivia, Colombia and Peru from 1993-1996. .

He has authored numerous books, over 45 book chapters and 90 academic journal articles on the subject of illegal drugs.

THE BECKLEY/FORESIGHT SEMINAR
ON FUTURE POLICY CHALLENGES
TUESDAY, 22 NOVEMBER 2005

CHAIR
LORD LAYARD

Richard Layard was founder-director of the LSE Centre for Economic Performance, a large research centre covering most areas of economic policy. Since 2000 he has been a member of the House of Lords. He has written widely on unemployment, inflation, education, inequality and post-Communist reform. He was an early advocate of the welfare-to-work approach to unemployment, and co-authored the influential book "*Unemployment: Macroeconomic Performance and the Labour Market*" (OUP 1991). He was Chairman of the European Commission's Macroeconomic Policy Group in the 1980s and then co-Chairman of the World Economy Group set up by WIDER. From 1991-97 he was an economic adviser to the Russian government's economic staff. His current research interest focuses on happiness, aiming to achieve a unified understanding of the insights of economics, psychology, neuroscience and philosophy.

SPEAKERS

PROFESSOR ALASTAIR CAMPBELL
UNIVERSITY OF BRISTOL

Alastair Campbell is Professor Emeritus of Ethics in Medicine in the School of Medicine, University of Bristol and Director of the Centre for Ethics in Medicine. He is a former President of the International Association of Bioethics. Recent publications include *Health as Liberation* (Pilgrim Press, 1995) and *Medical Ethics, 4th Edition*, co-authored with Grant Gillett and Gareth Jones (Oxford University Press, 2005). Professor Campbell is a member of the Medical Ethics Committee of the British Medical Association. Until recently, Professor Campbell was Chairman of the Wellcome Trust's Standing Advisory Group on Ethics and Vice-chairman of the Retained Organs Commission. He is currently Chairman of the UK Biobank's Ethics and Governance Council.

ANDREW JACKSON
FORESIGHT, OFFICE OF SCIENCE AND TECHNOLOGY

Andrew is Deputy Director of the Foresight programme at the Office of Science and Technology. He has overseen a number of the recent Foresight projects, covering topics such as, Cognitive Systems, Flood and Coastal Defence, Intelligent Infrastructure and Brain Science, Addiction and Drugs. Before taking up his current post, Andrew has worked in the DTI across a broad range of areas, including European Union policy, government department legislation and finance.

PROFESSOR ROBERT MACCOUN
UNIVERSITY OF CALIFORNIA AT BERKELEY

Robert MacCoun is Professor of Public Policy, Professor of Law, and Affiliated Professor of Psychology at the University of California at Berkeley. Prior to joining the Berkeley faculty, from 1986-1993 he was a behavioural scientist at RAND, a non-profit policy research organization.

MacCoun has collaborated with economist Peter Reuter on studies of street-level drug dealing in Washington, DC., comparative research on European and American drug policies, and analyses of the effects of drug laws on drug use and drug-related harms. Their book, *Drug War Heresies: Learning from Other Vices, Times, and Places*, was published in August 2001 by Cambridge University Press. MacCoun has also conducted numerous studies of jury decision-making, civil litigation, and bias in the interpretation of research results, and he is a co-author of RAND's 1993 study of the effects of sexual orientation on military performance. His articles have appeared in *Science*, *Psychological Review, American Psychologist, Annual Review of Psychology, The Nation,* and various legal and social science journals. In 1996 he was selected as Distinguished Wellness Lecturer by the California Wellness Foundation and the University of California. In 1999, he was a Visiting Professor at the Woodrow Wilson School at Princeton University.

PROFESSOR DAVID NUTT
UNIVERSITY OF BRISTOL

David Nutt (DM, FRCP, FRCPsych, FMedSci) is currently Professor of Psychopharmacology and Head of the Department of Community Based Medicine at the University of Bristol.

He received his undergraduate training in medicine at Cambridge and Guy's Hospital, and continued training in neurology to MRCP. After completing his psychiatric training in Oxford, he continued there as a lecturer and then later as a Wellcome Senior Fellow in psychiatry. He then spent two years as Chief of the Section of Clinical Science in the National Institute of Alcohol Abuse and Alcoholism in NIH, Bethesda, USA. On returning to England in 1988 he set up the Psychopharmacology Unit in Bristol, an interdisciplinary research grouping spanning the departments of Psychiatry and Pharmacology. Their main research interests are in the brain mechanisms underlying anxiety, depression and addiction and the mode of action of therapeutic drugs.

He is currently a member of the Advisory Council on the Misuse of Drugs (ACMD), and Chair of its Technical Committee, a member of the Committee on Safety of Medicines (CSM), on the Council and President-Elect of the European College of Neuropsychopharmacology (ECNP) and a Director of the 'European Certificate in Anxiety and Mood Disorders' and the 'Masters in Affective Disorders' Courses jointly administered by the Universities of Maastricht, Bristol and Florence. In addition, he is the Editor of the Journal of Psychopharmacology, advisor to the British National Formulary and a Past-President of the British Association of Psychopharmacology (BAP). He was also a member of the Independent Inquiry into the Misuse of Drugs Act 1971, chaired by Viscountess Runciman that reported in 2000.

PROFESSOR PETER REUTER
UNIVERSITY OF MARYLAND

Peter Reuter is Professor in the School of Public Policy and in the Department of Criminology at the University of Maryland. From 1999 to 2004 he was editor of the *Journal of Policy Analysis and Management.* He is Director of the newly formed Center on the Economics of Crime and Justice Policy at the University.

From 1981 to 1993 he was a Senior Economist in the Washington office of the RAND Corporation. He founded and directed RAND's Drug Policy Research Center from 1989-1993; the Center is a multi-disciplinary research program begun in 1989 with funding from a number of foundations. His early research focused on the organization of illegal markets and resulted in the publication of *Disorganized Crime: The Economics of the Visible Hand* (MIT Press, 1983), which won the Leslie Wilkins award as most outstanding book of the year in criminology and criminal justice. Since 1985 most of his research has dealt with alternative approaches to controlling drug problems, both in the United States and Western Europe. His other books are (with Robert MacCoun) *Drug War Heresies: Learning from Other Places, Times and Vices* (Cambridge University Press, 2001 and (with Edwin Truman) *Chasing Dirty Money: The Fight Against Money Laundering* (Institute for International Economics, 2004). He is currently directing a project on global heroin markets.

Dr. Reuter was a member of the National Research Council Committee on Law and Justice from 1997-2002 and of the Office of National Drug Control Policy's Committee on Data, Research and Evaluation from 1996-2003. He served on the Institute of Medicine Committee on the Federal Regulation of Methadone (1992-1994) and the IOM panel on Assessing the Scientific Base for Reducing Tobacco-Related Harm (2000). The Attorney General appointed him as one of five non-governmental members of the Interagency Task Force on Methamphetamine in 1997. He has testified frequently before Congress and has addressed senior policy audiences in many countries, including Australia, Chile, Colombia and Great Britain. He has served as a consultant to numerous government agencies (including GAO, ONDCP, NIJ, SAMHSA) and to foreign organizations including the European Monitoring Center on Drugs and Drug Abuse, United Nations Drug Control Program and the British Department of Health. Dr. Reuter received his PhD in Economics from Yale.

PROFESSOR TREVOR ROBBINS
UNIVERSITY OF CAMBRIDGE

Trevor Robbins was appointed in 1997 as the Professor of Cognitive Neuroscience at the University of Cambridge. He was elected to the Chair of Expt. Psychology (and Head of Department) at Cambridge from October 2002. He is also Director of the newly-established Cambridge MRC-Wellcome Trust Behavioural and Clinical Neuroscience Institute, the main objective of which is to inter-relate basic and clinical research in Psychiatry and Neurology for such conditions as Parkinson's, Huntington's, and Alzheimer's diseases, frontal lobe injury, schizophrenia, depression, drug addiction and developmental syndromes such as attention deficit/hyperactivity disorder.

Trevor has been President of the European Behavioural Pharmacology Society (1992-1994) and he won that Society's inaugural Distinguished Achievement Award in 2001. He was also President of the British Association of Psychopharmacology from 1996 to

1997. Other awards include a medal at the College de France and the IPSEN Foundation medal for outstanding research. He has edited the journal *Psychopharmacology* since 1980 and joined the editorial board of *Science* in Jan. 2003. He is a Fellow of the British Psychological Society and of the Academy of Medical Sciences. He has been a member of the Medical Research Council (UK) and chaired the Neuroscience and Mental Health Board from 1995 until 1999. He has been included on a list of the 100 most cited neuroscientists by ISI. He has published about five hundred full papers in scientific journals or chapters and has co-edited three books (*Psychology for Medicine: The Prefrontal Cortex*; *Executive and Cognitive Function, and Disorders of Brain and Mind).* He has been elected (May 2005) as a Fellow of the Royal Society and recently gave the Fred Kavli Distinguished International Scientist Lecture at the Society for Neuroscience Annual Meeting, in Washington D.C.

PROFESSOR BARBARA J. SAHAKIAN
UNIVERSITY OF CAMBRIDGE

Barbara J Sahakian is Professor of Clinical Neuropsychology at the Department of Psychiatry, School of Clinical Medicine, University of Cambridge. She obtained her BA (Magna cum Laude) from Mount Holyoke College, her PhD from the University of Cambridge (Darwin College) and her Dip Clin Psych from the British Psychological Society. She held postdoctoral positions at the Massachusetts Institute of Technology (MIT, Cambridge, USA) and the Institute of Neurology (Queen Square, London). Before taking up her academic post at the University of Cambridge, she was a Lecturer and a Senior Lecturer in the Department of Psychiatry, Institute of Psychiatry (London). Her research interests include neuropsychology, neuropsychiatry, neuroimaging and cognitive psychopharmacology.

Professor Sahakian has over 185 publications in scientific journals including *Nature, Science, The Lancet, British Medical Journal, Archives of General Psychiatry, The Journal of Neuroscience, Brain, Psychopharmacology* and *Psychological Medicine.*

She is also co-inventor of the CANTAB computerised neuropsychological tests, which are in growing use world-wide. Professor Sahakian is a Fellow of Clare Hall, where she chairs the Visiting Fellowships and Research Fellowships Committee, and a Bye-Fellow of Christ's College, where she is Director of Studies in Experimental Psychology. She has held the F.C. Donders Visiting Chair in Psychopharmacology at Utrecht University, Netherlands in 2004-5, is a Fellow of the Academy of Medical Sciences and will shortly be joining the MRC Neuroscience and Mental Health Board.

DOCTOR CHARLES R. SCHUSTER
WAYNE STATE SCHOOL OF MEDICINE

Charles R. Schuster, PhD, is an internationally recognized researcher on the psychopharmacology of drugs of abuse. From 1986 – 1992, Dr. Schuster served as the Director of the National Institute on Drug Abuse (NIDA). In January 1992, Dr. Schuster returned to his research career as a Senior Research Scientist at the Addiction Research Center of the NIDA. In January 1995, Dr. Schuster was appointed as a Professor in the Department of Psychiatry and Behavioural Neurosciences at Wayne State University School of Medicine and the Director of the Clinical Research Division on Substance Abuse. In September 2000, he assumed the position of Director of the Great Lakes

Regional Node of the NIDA Clinical Trials Network. Prior to joining the National Institute on Drug Abuse (NIDA) in 1986, Dr. Schuster was the Director of the University of Chicago's Drug Abuse Research Center, and Professor of Psychiatry, Pharmacology and Behavioural Science. He has authored or co-authored over 200 scientific journal articles, as well as numerous book chapters and several books. He has served on the FDA Drug Abuse Advisory Committee and is also a member of the Expert Advisory Panel on Drug Dependence of the World Health Organization.

Dr. Schuster's primary research interests include the development of medications and behavioural interventions for the treatment of tobacco, cocaine, amphetamine and heroin dependence; the laboratory evaluation of new medications for their abuse potential; post-marketing surveillance of diversion and abuse of new psychotropic medications; and the role of co-morbid psychiatric disorders in the aetiology and maintenance of drug dependence. Dr. Schuster has been active in numerous professional organizations and has been the recipient of many awards.

PARTICIPANTS ATTENDING
THE BECKLEY FOUNDATION
GLOBAL DRUG POLICY SEMINAR 2005
20-22 NOVEMBER 2005

CHAIRS

Prof. Colin Blakemore	*Chief Executive, Medical Research Council, Waynflete Professor of Physiology, Oxford University, UK*
Lord Layard	*Professor Emeritus, London School of Economics, UK*
Prof. David Nutt	*Chairman, Technical Committee, Advisory Council of the Misuse of Drugs, Professor of Pychopharmacology, Bristol University, UK*
Viscountess Runciman, D.B.E.	*Chair, Police Foundation Report "Drugs and the Law" (2000), UK*

SPEAKERS

Dr. David Bewley-Taylor	*Senior Lecturer, Department of American Studies, University of Wales, UK*
Prof. Colin Blakemore	*Chief Executive, Medical Research Council, Waynflete Professor of Physiology, Oxford University, UK*
Prof. Alastair Campbell	*Director, Centre for Ethics in Medicine, University of Bristol, UK*
Dr. Anindya Chatterjee	*Senior Adviser, Prevention and Public Policy, Policy, Evidence and Partnerships Department, UNAIDS*
Paul Goggins M. P.	*Parliamentary Under Secretary for Drugs and Serious and Organised Crime, Home Office, UK*
Prof. Leslie Iversen	*Professor of Pharmacology, University of Oxford, UK*
Andrew Jackson	*Deputy Director, Foresight Directorate, Office of Science and Technology, Department of Trade and Industry, UK*
Rob Kampia	*Executive Director, Marijuana Policy Project (MPP), USA*
Prof. Mark Kleiman	*Professor of Public Policy, University of California Los Angeles, USA*

Prof. Robert MacCoun	*Professor of Law and Public Policy, University of California, Berkeley, USA*
Lord Mancroft	*Spokesman on drugs in the House of Lords. Chairman of the Drug and Alcohol Foundation, UK*
Prof. John Marsden	*Senior Lecturer in Addictive Behaviour, Institute of Psychiatry, UK*
Amanda Lady Neidpath	*Director, The Beckley Foundation, Co-Director, Beckley Foundation Drug Policy Programme, UK*
Prof. David Nichols	*Professor of Medicinal Chemistry and Molecular Pharmacology, Purdue University, USA*
Prof. David Nutt	*Chairman of the Technical Committee, Advisory Council of the Misuse of Drugs, Professor of Pychopharmacology, Bristol University, UK*
Prof. Peter Reuter	*Professor, School of Public Policy and Department of Criminology, University of Maryland, USA*
Prof. Trevor Robbins	*Professor of Cognitive Neuroscience, University of Cambridge, UK*
Dr. Marcus Roberts	*Head of Policy, Mind, UK*
Prof. Barbara Sahakian	*Professor of Clinical Neurophysiology, University of Cambridge, UK*
Prof. Charles Schuster	*Director, Substance Abuse Research Division, Wayne State School of Medicine, Former Director of NIDA, USA*
Alex Stevens	*Senior Researcher, European Institute of Social Services, University of Kent, UK*
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Principles Underpinning
The Beckley Foundation Drug Policy Programme

- That the current global drug control mechanism, (as enshrined in the three United Nations Conventions of 1961, 1971 and 1988), is not achieving the core objective of significantly reducing the scale of the market for controlled substances, such as heroin, cocaine, methamphetamine and cannabis.

- That the negative side-effects of the implementation of this system may themselves be creating significant social problems.

- That reducing the harm faced by the many individuals who use drugs, including the risk of infections, such as Hepatitis C and HIV/AIDS, is not a sufficiently high priority in international policies and programmes.

- That there is a growing body of evidence regarding which policies and activities are (and are not) effective in reducing drug use and associated health and social problems, and that this evidence is not sufficiently taken into account in current policy discussions, which continue to be dominated by ideological considerations.

- That the current dilemmas in international drug policy can only be resolved through an honest review of progress so far, a better understanding of the complex factors that create widespread drug use, and a commitment to pursue policies that are effective.

- That analysis of future policy options is unlikely to produce a clear 'correct' policy - what may be appropriate in one setting or culture may be less so in another. In addition, there are likely to be trade-offs between policy objectives (i.e. to reduce overall drug use or to reduce drug-related crime) that may be viewed differently in different countries.

- That future policy should be grounded on a scientifically based scale of harm for all social drugs. This should involve a continuous review of scientific and sociological evidence of the biological harm, toxicity, mortality and dependency; the relation to violent behaviour; the relation to crime; the costs to the health services; the general impact on others; and the total economic impact of the use of each individual drug on society.

The aim of this programme is to assemble and disseminate information and analysis that supports the rational consideration of these sensitive issues, and leads to the more effective management of the widespread use of psychoactive substances.