1

Introduction

For over thirty years there has been a recurrent debate in Australia (Senate Standing Committee on Social Welfare, 1977), Canada (Canadian Government Commission of Inquiry, 1970), the United Kingdom (Advisory Committee on Drug Dependence, 1968), and the USA (National Commission on Marihuana and Drug Abuse, 1972) about whether these societies should continue to prohibit the use of cannabis by adults. Cannabis prohibition was introduced in these countries before cannabis use became common among young adults (McAllister and Makkai, 1991; Manderson, 1993) in the late 1930s in the USA and in the early 1960s in countries that signed the UN Single Convention on Narcotic Drugs (1961) which classified cannabis as a narcotic drug with cocaine and heroin (McAllister, 2000).

The debate about the legal status of cannabis in the late 1960s and early 1970s was prompted by the fact that many young people in the US and UK were ignoring the prohibition on cannabis use. The seeming failure of criminal law to deter cannabis use, and the increasing number of young adults who appeared before the courts for using cannabis, prompted calls to repeal or reform cannabis prohibition (e.g. Advisory Committee on Drug Dependence, 1968; Kaplan, 1970; National Commission on Marihuana and Drug Abuse, 1972).

The most popular proposal has been 'decriminalisation': removing criminal penalties for cannabis use while maintaining prohibition. Decriminalisation has been opposed by those who believe that cannabis has serious adverse effects on the health of users and on societies which tolerate its use (e.g. Nahas and Latour, 1992). Proponents of cannabis liberalisation (e.g. Grinspoon and Bakalar, 1993; Zimmer and Morgan, 1997) argue that the major harms arising from cannabis use are consequences of the fact that its use is illegal (such as, fear of arrest, a black-market, and the adverse effects on reputation of a criminal conviction) rather than consequences of its use.

Ideally, societal policies towards cannabis use by young people should be informed by information on: (1) the harm that cannabis causes to the health of

those who use it; (2) the harm that cannabis use has on the health of people who do not use cannabis; (3) the extent to which criminal law deters young people from using cannabis; (4) the harms that arise from using the criminal law to deter people from using cannabis; (5) the social costs that would arise from changing laws prohibiting the use of cannabis by young people. Our book attempts to provide the best available information on each of these issues.

We do not attempt to answer a central political question about cannabis policy: How should our societies trade off the social costs of cannabis prohibition and the harms that cannabis causes to young people who use it and others who may be affected by their use? We make clear that such trade-offs are unavoidable, whether they are made implicitly or explicitly. We believe, however, that such trade-offs should be made through the political process in democratic societies. Our aim is to assist the political process by providing a fairer picture of the costs of cannabis use and of the policies that we have adopted towards cannabis. We especially want to move beyond the policy simplification that dominates the cannabis policy debate in many developed countries.

Policy simplifications and their costs

Public debates about socially contentious issues are invariably simplified in the competition for public attention in a crowded media and political marketplace. Proponents of competing cannabis policies have to capture the interest and attention of a busy and often distracted audience; in order to do so they often use highly simplified representations of the debate that meet their audience's need for cognitive economy. The reasons for this have been well stated by Moore and Gerstein (1981):

> In a democracy, government policy is inevitably guided by commonly shared simplifications. This is true because political dialogue that authorizes and animates government policy can rarely support ideas that are very complex or entirely novel. There are too many people with diverse perceptions and interests and too little time and inclination to create a shared perception of a complex structure. Consequently, influential policy ideas are typically formulated at a quite general level and borrow heavily from commonly shared understanding and conventional opinions. (p. 6)

The media in many developed societies often represents the cannabis policy debate as if it was a choice between two policy positions: (1) cannabis use is harmless (or at least much less harmful than alcohol), and hence it should be decriminalised (if not legalised); and (2) cannabis use is harmful to health, and therefore its use should continue to be prohibited. The consequence of this simplification is that the societal task of weighing the social costs and benefits of cannabis prohibi-

tion and alternative policies has often been reduced to the single question: does cannabis use adversely affect the health of those who use it? This simplification has distorted appraisals of the health risks of cannabis use in a number of ways (Hall, 1997).

First, the public has been presented with highly polarised evaluations of the health effects of cannabis. According to some proponents of decriminalisation, cannabis is 'safer than aspirin' (Ellard, 1992) while their opponents (e.g. Nahas and Latour, 1992) argue that cannabis is a 'deceptively dangerous' drug of high toxicity. The public have been understandably uncertain about what version to believe.

Second, the issues about which disagreement is fiercest distract attention from an assumption implicitly shared by both sides of the debate, namely, that cannabis is a 'special' drug. According to proponents of reform, cannabis differs from other psychoactive drugs in being unusually benign in its effects on the health of the user. To its opponents, cannabis is a 'deceptively dangerous' drug because its lack of acute toxicity disguises the adverse effects that its chronic use has on the personalities of cannabis users and the fabric of society (Walters, 1993). Treating cannabis as a special case has, for these very different reasons, prevented a more rational appraisal of the health effects of cannabis and of public policy towards its use.

Third, the competing appraisals of the hazards of cannabis use have illustrated the phenomenon identified by Room (1984) in debates about alcohol use in colonial societies. Those who disapprove of cannabis use engage in 'problem inflation' in which any evidence that cannabis use is harmful, however suggestive or tentative, is taken at face value and seen to justify a continuation of prohibition. This often elicits a reactive 'problem deflation' among their policy opponents who discount any evidence that some types of cannabis use may be harmful to some users. In behaviour reminiscent of the tobacco industry, they sometimes set such high standards of proof that no harm can conceivably be demonstrated. A fair appraisal of the health effects of cannabis has become a casualty of the debate about its legal status.

Fourth, the controversy about the severity of the health effects of cannabis has been a major obstacle to effective public education about its health risks. Effective education presupposes a consensus upon what the adverse health effects of cannabis are. In the absence of consensus, governments have been reluctant to provide health information on cannabis for want of agreement about the advice to give (Hall and Nelson, 1995). When they have provided health information its accuracy has often been hotly contested by critics of current policy.

Aims of the book

Our aim in writing this book has been to improve the quality of public policy debate on cannabis by ensuring that all relevant issues are addressed. We have been

inspired by an influential book on alcohol policy (Edwards et al., 1994) whose approach to alcohol policy we very much admire and would like to emulate. This remains an aspiration in the absence of a tradition of research on patterns of cannabis use and policy that matches the quality of almost a century of scholarly debate about alcohol use and policy. We nonetheless hope that our effort will contribute to the development of an analogous research tradition on cannabis use and public policies towards it.

Our focus is primarily on *recreational* cannabis use in developed countries because it is this type of cannabis use that is most controversial. The debate about the medical uses of cannabis is considered a secondary issue because if recreational cannabis use was legal then anyone who wanted to use it for therapeutic reasons could do so. We also argue that there are ways of allowing the compassionate use of cannabis for medical purposes that do not require substantial changes in current policy towards recreational cannabis use (see Appendix 1).

The evidence we cite is predominantly about recreational cannabis use in developed societies, such as the United States, Europe and Australia This is where debate about cannabis use for recreational purposes has been fiercest; it is also where societal concern about cannabis use has prompted the most research on the harms of cannabis use, and to a much lesser extent, on the effects and costs of existing policy. Similar concerns have begun to emerge about recreational cannabis use in developing societies, including some where cannabis has traditionally been used for religious purposes, such as India. Although patterns of cannabis use have not been well studied in these societies (Hall et al., 1999), recreational cannabis use has appeared among urban youth in India where it has begun to raise similar concerns to those expressed in developed societies (Machado, 1994).

Organisation of the book

The book is organised into eight sections. The first section describes cannabis as a drug and the ways in which it is typically used. Chapter 2 describes what is known about cannabis as a drug: the typical effects sought by users, its psychoactive constituents, the biology of cannabinoids, mechanisms of action, typical doses and methods of use. Chapter 3 reviews data on patterns of recreational cannabis use in developed societies.

The second section of the book (Chapters 4, 5 and 6), reviews evidence on the adverse health effects of cannabis use. These include the acute effects of use (Chapter 4) and the effects of chronic use on cellular, immunological and reproductive functioning (Chapter 5) and cardiovascular, respiratory and gastrointestinal systems (Chapter 6).

The third section of the book (Chapters 7, 8 and 9) examines the psychological effects of chronic cannabis use. These include effects on motivation and the risk of dependence (Chapter 7), effects on cognitive functioning (Chapter 8) and effects on the risk of developing psychosis (Chapter 9).

The fourth section deals with one of the most contentious issues in the debate: the effects of cannabis use on adolescents. Chapter 10 discusses the gateway hypothesis and Chapter 11 discusses the effects of cannabis use on psychosocial outcomes of adolescence.

The fifth section considers the harms and benefits of cannabis use. Chapter 11 summarises the findings of the preceding chapters on the adverse health effects of cannabis and compares these with the health effects of alcohol and tobacco. Chapter 12 considers the possible benefits of cannabis use, something that critics of current policy argue have been ignored in policy debates.

The sixth section considers the cannabis policy debate. Chapter 13 and 14 focus on two central claims of strategic significance to the case for cannabis law reform: whether prohibition has any deterrent effects on cannabis use (Chapter 13) and the economic costs of enforcing the current prohibition on cannabis use and cannabis supply (Chapter 14). Chapter 15 summarises some of the other less tangible costs of cannabis prohibition that have been identified by its critics.

Section seven explores alternative cannabis control policies in some detail. Chapter 16 discusses variations on prohibition that have been proposed and trialled in a number of developed societies. Chapter 17 discusses what is at present only a logical possibility: a legal market in which cannabis could be legally produced, sold and used. We outline the type of heavily regulated legal cannabis market that we believe would be most likely to minimise the harms of increased cannabis use that we argue would be an unavoidable consequence of allowing a legal cannabis market.

The final chapter summarises the arguments that have been developed in the book about the harms of cannabis use and the costs and effectiveness of cannabis prohibition. We end by suggesting some ways to move the cannabis policy debate forward by developing support for incremental policy changes, the costs and effects of which would be systematically evaluated.

Approach to the literature on the health effects of cannabis

Our approach to assessing the health risks of cannabis is to use the same standards that are used to evaluate the health risks of other drugs, ensuring that areas of ignorance are clearly disclosed so that it is easier to identify what we need to know to better inform policy. We also aim to reduce the confusion between questions of fact about health risks and moral issues and vice versa.

Separating the legal and health issues

The quality of both our assessments of the health effects of cannabis and the debate about the legal status of cannabis use would be improved if we clearly separate the two issues. They are understandably connected because the adverse health effects of cannabis use are one of the principal justifications offered for its use being a criminal offence. Consequently, if there were no adverse health effects of cannabis use, a different justification would need to be found for its continued prohibition. One such justification could be that prohibition was justified by societal consensus that it was undesirable for substantial numbers of citizens to spend a large part of their time in an intoxicated state (Kleiman, 1992). Such an argument would be a substantial improvement on moral objections to cannabis use being justified on the grounds of a threat to public health.

The failure to separate the health and legal issues means that the appraisers' views about the legal status of cannabis often prejudice their appraisals of its health effects. As argued above, this has operated in both directions, with opponents of its use inflating its health effects while proponents deflate their estimates, each driven by the implicit assumption that any adverse health effects justify prohibition. A clear distinction between the two issues is one way of ensuring a fairer discussion of both.

Not treating cannabis as a special case

In considering the health effects of cannabis use we have adopted the same approach as has been used to assess the health risks of alcohol and tobacco. This means that we begin with the assumption (derived from pharmacology and toxicology) that cannabis is likely to harm health when used at some dose, at some frequency or duration of use, and by some methods of administration (Fehr and Kalant, 1983). This is true for alcohol, tobacco, opiates, psychostimulants and benzodiazepines. It is also reasonable to assume that because cannabis is an intoxicant like alcohol and is usually smoked like tobacco, it is likely to share at least some of the adverse health effects of these two drugs.

Using a reasonable standard of evidence

If we must prove 'beyond reasonable doubt' that cannabis is a cause of adverse health effects then very few conclusions can be drawn about the adverse health effects of cannabis and very little advice could be given on how to reduce these harms. 'Beyond reasonable doubt' is arguably too high a standard of proof (Fehr and Kalant, 1983). Sensible, if fallible, health advice can be based on conclusions about the most *probable* adverse health effects of cannabis. We have set out the criteria that we have used in making causal inferences about the adverse health effects of cannabis in the introduction to section two. We have generally accepted the

consensus of informed scientific opinion as the basis for inferring a *probable* causal connection between cannabis use and a health outcome. Consensus is expressed in authoritative reviews in peer reviewed journals and in consensus conferences of experts (e.g. WHO Program on Substance Abuse, 1997; Institute of Medicine, 1999).

Our approach to the cannabis policy debate

There are a number of technical reasons why the evaluation of competing social policies towards cannabis use cannot be as rigorous as, and is much less likely to achieve consensus than, appraisals of the adverse health effects of cannabis.

First, there is much less empirical evidence on the costs and benefits of different social policies towards cannabis. Much more funding has gone into research on its health effects than to evaluations of law enforcement or drug control policies (Manski et al., 2001).

Second, there are few alternative cannabis policies to evaluate because international agreements on cannabis prohibition have ensured that the policy options available for evaluation typically involve small variations in penalties for cannabis use. Arguments for reform have had to depend upon analogies between the effects of prohibiting cannabis and other drugs (e.g. alcohol prohibition in the USA), other vices (e.g. prostitution and gambling) or limited examples of more adventurous policies in other countries (e.g. the Netherlands) (MacCoun and Reuter, 2001).

Third, as will become apparent, many of the adverse social consequences of cannabis prohibition identified by its critics (e.g. loss of liberty, loss of respect for the rule of law, loss of medical uses of cannabis) are more difficult to measure than diseases and deaths attributed to cannabis use.

Fourth, it is much more difficult to make causal inferences about the effects of social policy on cannabis use and cannabis-related harms than it is to make causal inferences about the health effects of cannabis. There is not the same degree of consensus on standards for evaluating social policies as there is in appraising epidemiological and medical evidence. Policy analysis is typically based upon comparing rates of cannabis use in whole societies or large administrative units (such as States in a Federation). True experiments can rarely be performed (one cannot stratify for history) and there are limited opportunities to use statistical methods to adjust for differences between societies. There are also usually many plausible rival explanations of changes in cannabis use that may occur after a policy change (such as, changes in social attitudes, social and economic conditions, and the measurement of cannabis use and its consequences) (Cook and Campbell, 1979). The task of deciding between competing explanations is made more difficult by the limited data available to distinguish between them. As a consequence of all these

factors, the interpretations of the evidence on the effects of different social policies towards cannabis are even more contested than the interpretation of evidence on the adverse health effects of cannabis.

The role of social values

Policy analysis is not and cannot be solely an empirical science. Deciding which policy to adopt involves trade-offs between competing values, such as, public health, individual liberty, public order and so on. Different types of trade-offs are advocated by supporters of competing and incommensurable moral philosophies.

Two types of moral theory are often distinguished: consequentialist and deontological theories (Beauchamp and Childress, 2001; MacCoun and Reuter, 2001). Consequentialist ethical theories judge actions, rules or policies by their consequences. One of the most influential consequentialist theories has been Jeremy Bentham's and John Stuart Mill's utilitarianism according to which the goal of social policy should be to achieve the greatest happiness of the greatest number. A utilitarian evaluation of cannabis policy requires an assessment of the costs and benefits of current and alternative cannabis policies (MacCoun and Reuter, 2001).

Deontological theorists reject the utilitarians' claim that the cannabis policy debate is an exercise in social accounting. Deontological ethical theories assess drug policy by its compliance with categorical moral imperatives, that is, moral principles that admit of no exceptions and that should be obeyed regardless of their consequences (Beauchamp and Childress, 2001). Deontological moral theories have been used to justify both liberal and prohibitionist cannabis policies. On the prohibitionist side of the debate, is 'legal moralism' (MacCoun and Reuter, 2001), the view that cannabis use is wrong in itself, and so should not to be tolerated under any circumstances. Any adverse social consequences of adopting this policy are not regarded as reasons for changing it.

On the other side of the debate are libertarians who argue that individual liberty should never be infringed by the state in order to protect adults from harming themselves. For libertarians, the individual liberty of adults to use any drug that they choose trumps any attempt to justify cannabis prohibition as a way of reducing harms caused by cannabis use. Husak (2002), for example, has argued that the use of all illicit drugs should be decriminalised because it is unjust to impose criminal punishments on individuals for using drugs that harm only themselves.

Consequentialist arguments feature prominently in the cannabis policy debate in many countries, as they do in many other areas of social policy (Goodin, 1995). The costs and benefits of social policies and laws are the coin of social policy debate in pluralist liberal democracies (MacCoun and Reuter, 2001). The policy focus on consequences is in part motivated by the absence of a societal consensus

on deontological moral principles (MacCoun and Reuter, 2001). We have adopted a consequentialist approach to the evaluation of cannabis policy in this book. Our aim is to state what is known about the social costs of cannabis use and the social consequences of current and alternative cannabis policy regimes. We aim to present the evidence on the consequences of different policy options, as clearly and fairly as we can and to assess the arguments, as best we can, in the light of the available evidence. Our models have been Kleiman (1992) and MacCoun and Reuter (2001) who provide even-handed analyses of drug policies while avoiding easy and unhelpful equipoise between competing policies.

The criteria that we use in appraising alternative cannabis policy regimes are: their probable effects on patterns of harmful cannabis use; their social costs (criminal justice, victimisation, productivity, dependence, disrespect for law); their health costs (as a component of social costs); and their ability to regulate the quality of the cannabis that is consumed and to maintain its price at a level that minimises harmful patterns of cannabis use. As will be outlined later, our two main criteria for evaluating the strengths and weaknesses of alternative regimes for cannabis are: (1) their likely impact on cannabis use, as reflected in the prevalence of any use, of regular use, and especially of long-term regular use; and (2) their likely impact on social costs, including the costs of the policy and the costs that are averted by the policy.

1 Cannabis the drug and how it is used