

CHAPTER 3 THE PATHS NOT (YET) TAKEN: LOWER RISK ALTERNATIVES TO FULL MARKET LEGALIZATION OF CANNABIS

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California's 2010 Proposition 19 (and the similar AB 2254 Ammiano Bill) would have allowed local jurisdictions to legalize the production, sales, purchase, and possession of cannabis for California adults, as well as small-scale home cultivation. Although neither measure succeeded, Prop 19 was endorsed by over 46 percent of the electorate, and similar propositions are expected on the 2012 ballot. Other states will undoubtedly entertain related proposals in coming years. The central question in this chapter is: ***If we were to permit legal access to cannabis for adults, are there better approaches than that envisioned by Proposition 19?*** I will not actually address whether we should legalize cannabis (see MacCoun & Reuter, 2001, 2011) but rather, if we decide we are going to do it, how should we do it?

"Better" in this context could involve many different normative standards. Some are deontological (e.g., libertarian, religious); others are consequentialist. The latter category includes myriad public health, public safety, and economic factors. Assessing these consequences is complex because of considerable uncertainty about the extent to which observed associations between cannabis and harms are causal or spurious, and the extent to which any causation is due to the illegality of cannabis rather than its intrinsic effects on health and behavior factors (see MacCoun, Reuter, & Schelling, 1996). In this chapter, I will oversimplify this complexity by assuming that (a) cannabis consumption does have some harmful consequences irrespective of legal status, (b) those harms vary directly with the total quantity of cannabis that is consumed (and perhaps with the potency of the cannabis), (c) there is no substitution effect between alcohol and marijuana, and (d) marijuana's potency and quantity consumed are influenced by policy design -- perhaps more so under some form of legalization than under full prohibition. From this perspective, a model is superior to Prop 19 if it permits legal access at lower risk of increased

consumption.¹ I do not attempt a political analysis here, and indeed public opinion data are insufficiently fine-grained, but a plausible conjecture is that a model that meets these criteria will also attract more voter support than Prop 19.

Reflections on Prop 19

Elsewhere, my colleagues and I have analyzed Proposition 19 in considerable detail (Kilmer, Caulkins, Pacula, MacCoun, & Reuter, 2010), varying the assumptions of a complex simulation model of the relationships among cannabis production, prices, taxes, consumption, and revenues. We have tried to abstract insights about the design of a regime for taxed and regulated production and retail sales (Caulkins et al., 2012). For simplicity, I will simply refer to such models as *full market models*, but the reader should bear in mind that many such models are conceivable and they may greatly differ in implementation and consequences. Here I will simply summarize some key points about market models based on our analyses (Caulkins et al., 2012; Kilmer et al., 2010).

1. Full market models significantly reduce the risks that suppliers face. Assuming that suppliers expect to be compensated for their risks, this implies that, *ceteris paribus*, prices will drop under a market model (Reuter & Kleiman, 1986).
2. Market models would also facilitate production methods affording considerable economies of scale and other efficiencies; these too would lower prices.
3. We estimated that the combined effect of these factors could produce an 80 to 90 percent reduction in the pre-tax retail price of an ounce of marijuana under grow house conditions, and possibly more under greenhouse or farm production.
4. Translating a price drop of this magnitude into a change in consumption is difficult, because we know relatively little about the shape of the demand curve (e.g., linear vs. constant elasticity) and the price elasticity of demand for marijuana. But under plausible assumptions, lower prices could increase consumption by anywhere from 75 percent to 300 percent.

¹ Marijuana legalization becomes more compelling if in fact people would substitute away from alcohol consumption to marijuana; the evidence on this point is mixed (see Kilmer et al., 2010 for a review)

5. It is commonly assumed that any drop in prices under legalization could be offset by taxation. But a price drop of this magnitude would require a tax on the order of \$10/gram. In contrast, excise taxes on cigarettes are on the order of \$0.10/gram – two orders of magnitude smaller. This makes it highly likely that such a legal market would fail to eliminate the black market.
6. The Prop 19 model, which devolves decisions about taxation to local governments, risks creating a “race to the bottom,” where counties would opt for a much lower tax in order to compete for revenues.
7. Any attempt to implement a full-market model at a state or local level will be constrained by federal laws prohibiting marijuana, and by federal decisions about how to enforce them.

A seventh point is suggested by an examination of the history of attempts to regulate tobacco and alcohol in the U.S. (Humphreys, 2011; MacCoun & Reuter, 2001):

8. Because of the economic stakes involved, full market models politically empower the distribution industry in ways that make effective regulations politically difficult to implement and sustain.

If the goal is to legalize cannabis without significantly increasing consumption, there may be market models that would fit the bill better than Prop 19. For example, a model using state rather than local taxation and regulation would avoid the “race-to-the-bottom” dynamic and would strengthen regulators’ hands (see Caulkins et al., 2012). Unfortunately, by the same logic a unified federal system would be superior to a state system, and any state that attempts to “go it alone” will attract considerable federal scrutiny and interference, since such a model will conflict with various federal laws. Presumably, Prop 19’s local model was in part an attempt to “fly under the radar” of federal scrutiny.

Another consideration is what to tax. Most proposals for taxing cannabis envision taxation by weight. But there are fairly compelling reasons to consider taxing by THC content, and perhaps by the THC:CBD ratio (see MacCoun, 2010; Caulkins et al., 2012). There is now good evidence that cannabis is considerably more potent than a generation ago (e.g., McLaren et al., 2008). There is circumstantial but very plausible evidence that users are limited in their willingness

and ability to titrate their doses, and that with increased THC consumption (and a rising THC:CBD ratio) comes increased risk of harmful health and safety consequences, including dependency (see Di Forti et al., 2009; Hall & Degenhardt, 2009). Taxing by weight potentially encourages this troubling trend toward higher potency; taxing by content could help to discourage it, pushing cannabis back toward the “softer” products of earlier decades. The analogy is of course to taxes for softer vs. harder forms of alcohol. I have heard objections about the feasibility of testing and regulating by potency, but such arguments are hardly persuasive. With respect to technical feasibility, consider that cannabis seed dealers already list THC (and sometimes CBD) levels on their online catalogues.² With respect to cost, testing randomly chosen samples is seems a modest requirement to impose on an industry with such low production costs.

But in the remainder of this chapter, my focus is on three plausible alternatives to the full market approach: home cultivation (bypassing the full market approach altogether), Dutch-style cannabis coffee shops (a partial market approach), and buyer or grower clubs (intermediate between home cultivation and the Dutch approach). None of these models offer the revenues that Prop 19 was purported to generate – though it is questionable whether Prop 19 would have generated them either (Kilmer et al., 2010). But as we shall see, these alternatives are very likely superior to Prop 19 if the goal is to permit legal adult access without risking large increases in consumption.

Home Cultivation

Prop 19 would have allowed adults to cultivate cannabis in a 5-by-5-foot plot – too small for a significant commercial operation, but probably far larger than needed for personal consumption under current technologies. This alone, without any legal sales component, would have constituted a significant change in marijuana policy.

² e.g., www.amsterdammarijuanaseeds.com, www.kindgreenbuds.com, www.weed-seeds.net, www.cannabis-seeds.co.uk

There is no exact analogy to this proposal in other countries, but several jurisdictions (Alaska, South Australia, and Western Australia) have come close, essentially decriminalizing rather than legalizing home cultivation. Decriminalized home cultivation of cannabis for personal use but not sale is partially analogous to full-scale legalization; it increases the potential access to cannabis, reduces legal risks, and probably reduces stigma and forbidden fruit effects. It conceivably has some effect on prices, though the effect may be modest for the small quantities permitted in the cases examined here.

Alaska. Due to a complicated string of political events and legal decisions, Alaska has had two separate periods in which home cultivation of small numbers of plants was at least decriminalized, and arguably legalized. In May 1975, Alaska passed a law that treated possession of cannabis (an ounce or less in public, any amount in private) as a civil offense subject to a maximum \$100 fine. Later that month, the Alaska Supreme Court (*Ravin v. State*, 537 P.2d 494 [Alaska 1975]), ruled that the state's constitution protected the privacy of marijuana possession and use in the home, except for amounts "indicative of intent to sell," which the legislature in 1982 established as four ounces. In 1990, a ballot initiative "recriminalized" marijuana, upgrading possession of less than eight ounces to a misdemeanor potentially punishable by 90 days of jail time. But *State v. McNeil*, a 1993 Superior Court decision, argued that "Ravin was founded in the Supreme Court's interpretation of the Alaska Constitution. The legislature - nor for that matter the people through the initiative - cannot "fix" what it disliked in an interpretation of that document by legislation." During the next decade, there was considerable confusion about whether the *McNeil* ruling had in fact voided the recriminalization, and the issue was not clarified until the Alaska Supreme Court upheld a Court of Appeals decision (*Noy v. State*, 2003) reaffirming *Ravin*.

The available data are too sparse to assess the earlier period. Examining 1988 data on 12-17 year olds and high school seniors, MacCoun and Reuter (2001) noted that while Alaska exceeded comparison states for cannabis prevalence, but also (to a lesser extent) for alcohol and tobacco, and (to a greater extent) for

cocaine. They concluded that the data were too ambiguous to shed light on the Alaska policy.

Unfortunately, the newer post-Noy experience is similarly ambiguous. As seen in Figure 1, Alaska had higher rates of cannabis and other drug use prior to the late 2003 decision that re-decriminalized home cultivation. The available data show that Alaska's marijuana prevalence has fluctuated since Noy, falling in 2005-2007 then rising relative to the rest of the nation in 2007-2009. And while Alaska's rate exceeds the national average (and in some years, leads the nation), this was already true before the Noy decision. Thus, the data are again too ambiguous to permit any strong inferences about the effects of home.

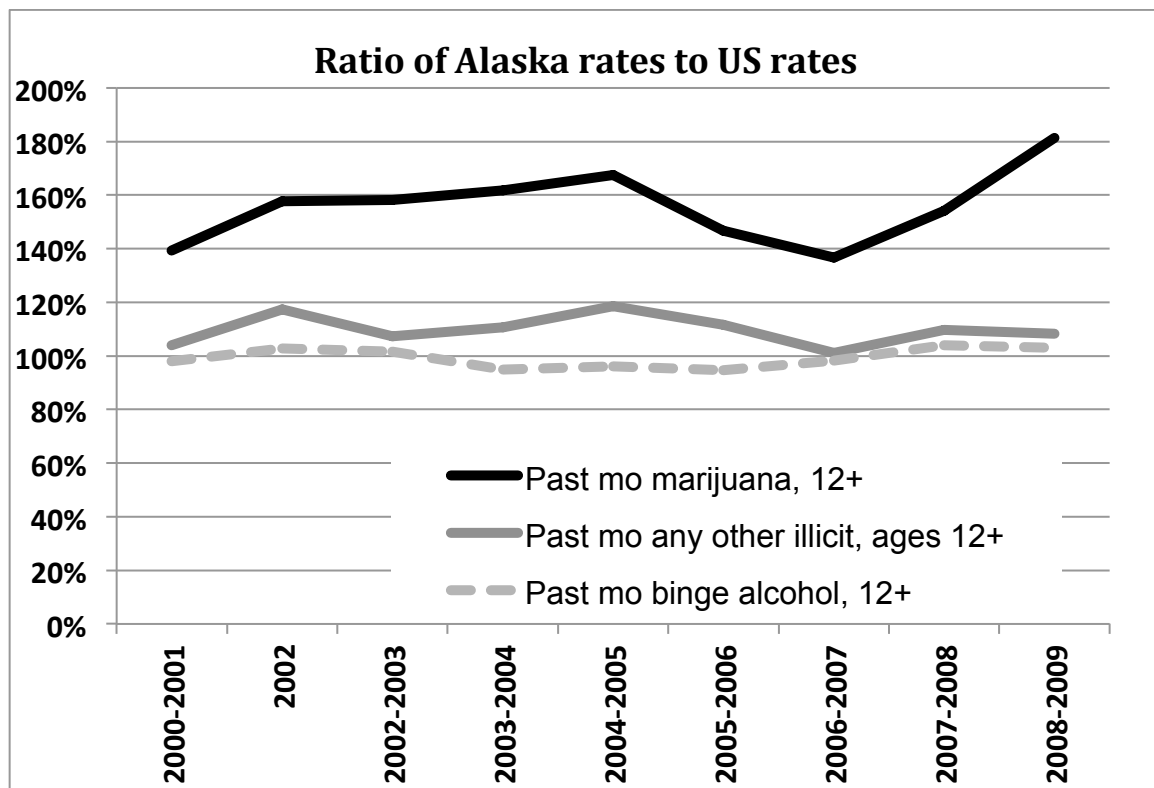


Figure 1. Ratio of past-month drug use rates in Alaska vs. the entire USA, 2003-2009. The Noy decision was announced in mid 2003. (SOURCE: NSDUH state-level data for various years. <http://www.oas.samhsa.gov>)

The South Australia Cannabis Expiation Notice policy. Australia's 1987 Cannabis Expiation Notice (CEN) policy also depenalized home cultivation, although it put in place a system of modest monetary fines that rise with the quantity in

possession. The initial CEN scheme allowed for up to 10 plants. This was later reduced to 3 plants in 1999, and is now down to only one plant. Although there are no stated limits on the size of the plant, a single plant is probably sufficient to supply one to three regular users for a year. Although the policy change is more subtle than the Alaska model, we know more about its effects due to a number of cross-sectional and longitudinal analyses. Analyzing survey data for 1985 to 1995, Donnelly, Hall, and Christie (1998) show that the lifetime prevalence of cannabis rose in South Australia from 26 percent to 36 percent. But they conclude that "it seems unlikely that this increase is due to the CEN system," because Victoria, Tasmania, and New South Wales showed similar increases (without adopting the legal change), and because South Australia did not differ from the rest of the country in the rate of weekly cannabis use. (See Figure 2.)

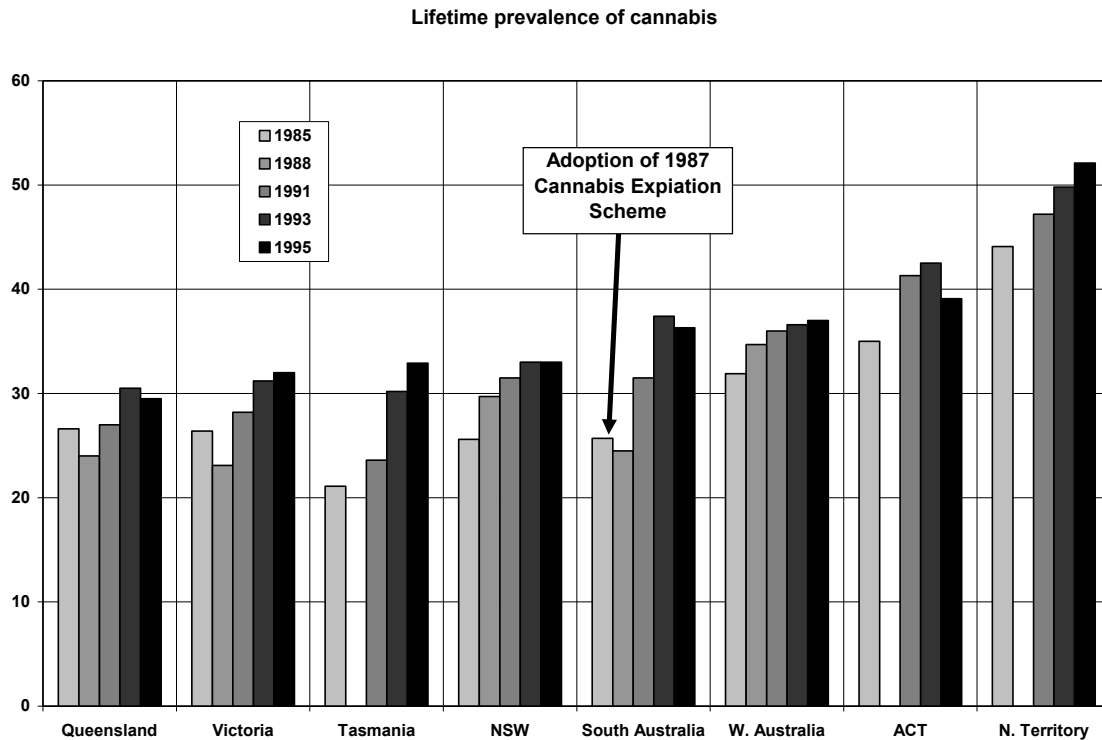


Figure 2. Trends in lifetime cannabis prevalence 1985-1995, for Australian states and territories. SOURCE: Data from Donnelly, Hall, & Christie (1998), Table 2.1.

As seen in Table 1, data from the 2007 National Drug Strategy Household Survey (Australian Institute of Health and Welfare, 2008) suggest that by 2008, South Australia looked quite similar to the rest of Australia with respect to both cannabis and other illicit drug use.

Table 1. Patterns of cannabis prevalence in South Australia vs. other Australian states and territories.

	South Australia	MEAN for other states/territories	MEDIAN for other states/territories
Past-year cannabis use (%)	10.2	10.0	9.3
Ratio of cannabis users to cocaine users	7.8	7.9	6.3
Ratio of cannabis users to ecstasy users	3.5	2.8	2.6
Recent cannabis use by 14-24 year olds	17.5	18.1	18.1
Any illicit excluding cannabis by 14-24 year olds	4.6	5.4	4.4

Williams (2004) analyzed data from the same household survey (for the years 1988, 1991, 1993, 1995, and 1998) using a more ambitious econometric analysis, concluding that "no evidence is found that either participation or frequency of use is sensitive to the criminal status of marijuana" in the sample as a whole. She does find that the change in law was associated with an increase in the likelihood of marijuana use among males over 25 years of age.

Thus we see that there were parallel increases in cannabis use throughout various parts of Australia a few years after South Australia adopted the 1987 CEN scheme, and it is possible that the scheme played some role in this effect, at least for some users. Could the parallel increases have been attributable to increases in the distribution of South Australian cannabis to other states and territories, due to increased supply and/or a decrease in price? This does seem possible. Figure 3 shows that in 1991-1992, the price of cannabis did drop in South Australia, a period that roughly coincides with the increases in use. Prices for the rest of the nation did

dip soon thereafter, and their declines were lagged somewhat and were smaller than the South Australia decline – two features that one would expect if the South Australian effect was diffusing to other states and territories. This was several years after the CEN policy was adopted, and if it was due to the scheme, the effect appears to have been short-lived.

Another factor to consider in interpreting the CEN experience is that, at least in the short run, it still involved considerable criminal justice sanctioning by the state. Using data on yearly CEN issuances and prosecutions, Christie and Ali (2000) show that the CEN scheme actually had a "net-widening" effect – an increase in prosecutions for minor cannabis offenses, apparently caused by the large fraction of fines that went unpaid.

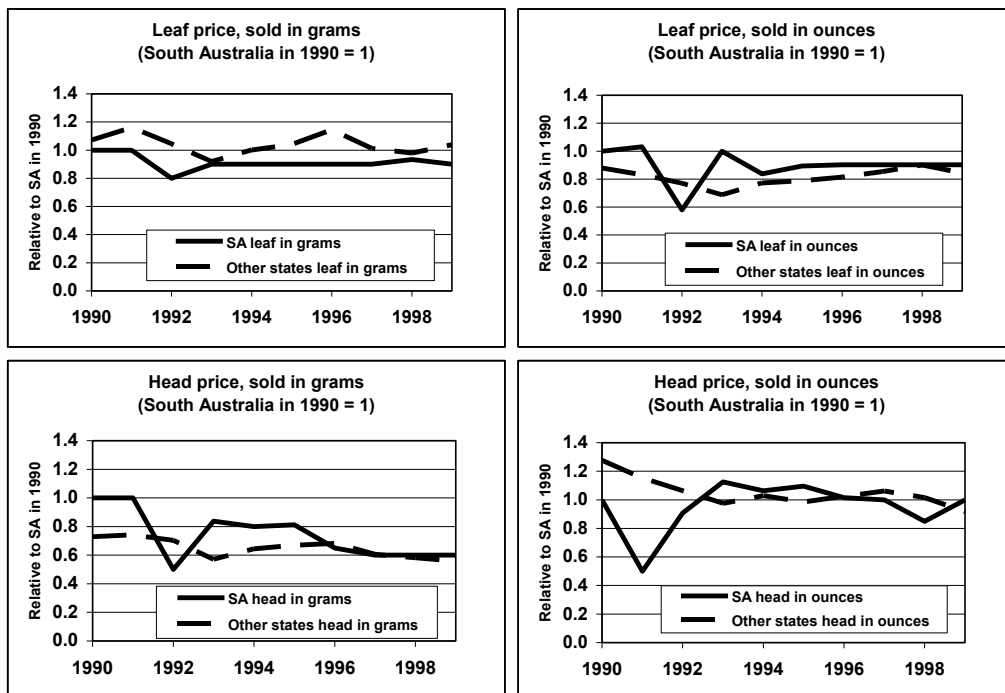


Figure 3. Changes in cannabis prices relative to 1990 South Australia levels. SOURCE: Author calculations based on data from Clements (2010), Tables 1 and 2.

Western Australia. Between 2004 and 2011, Western Australia had a similar policy. The Cannabis Infringement Notice (CIN) scheme. The Cannabis Control Bill adopted in March 2004 established a limited fine of AU\$200 for possession of up to two non-hydroponic cannabis plants (Lenton & Allsop, 2010, p. 814). Lenton (2011) estimates that about 9000 CINs were issued over 3 years; about two thirds to three fourths were expiated, at a net savings of \$2.3 million in criminal justice costs in the first three years of the policy. As with South Australia, the available evidence does not suggest that the policy increased consumption; indeed, between 2003 and 2007, past year use dropped more rapidly in Western Australia than in Australia as a whole. Nevertheless, the Cannabis Law Reform Act of 2010 restored criminal sanctions for cultivation. Lenton (2011) attributes this change to the election of Colin Barnett, a vocal opponent of cannabis law reforms, as Premier of Western Australia.

Assessment. The rocky history of home cultivation policies in Alaska and Australia says more about their political fragility than about any inherent flaws in their design or implementation. The available evidence does not suggest that decriminalized home cultivation leads to increases in the prevalence of use; though consumption data are harder to come by, there is no clear evidence for a significant price drop. By the same token, there is no evidence as to whether home cultivation in these jurisdictions has made a significant dent in the black market either. Truly legalized home cultivation could potentially lead to more dramatic effects, but it seems unlikely that it poses the risk to consumption levels of a full market model. Caulkins et al. (2012) note that a home cultivation allowance could undermine regulatory controls under a full market model. But that is less of a concern for home cultivation without a legal retail market. It is easy to imagine ways in which some participants could “cheat” in a home cultivation model, but the relevant comparison is not to a perfect system but rather to the current regime, where all non-medical growers and users are cheaters.

The Dutch Cannabis Coffeeshop System³

In 1976 the Netherlands adopted a formal written policy of non-enforcement for violations involving possession or sale of up to 30 grams of cannabis. The "gateway theory" has long been seen as an argument for being tough on cannabis, but interestingly, the Dutch saw that concept as a rationale for allowing retail outlets to sell small quantities (see MacCoun & Reuter, 2001). Rather than seeing an inexorable psychopharmacological link between marijuana and hard drugs, the Dutch hypothesized that the gateway mechanism reflected social and economic networks, so that separating the markets would keep cannabis users out of contact with hard-drug users and sellers.

During the early 1980s, many coffeeshops in Amsterdam and other cities began selling small quantities of cannabis. Although the numbers are currently dropping, the most recent systematic count identified around 700 retail cannabis outlets in the Netherlands – about one per 29,000 citizens (one per 3000 in Amsterdam) (see Bieleman et al, 2009). The shops sell somewhere between 50 and 150 metric tons of cannabis at a value of perhaps 300 to 600 million euros a year. It is estimated that a quarter of the 4 to 5 million tourists who visit Amsterdam go to a coffeeshop, and that 10 percent of them cite that as a reason why they came (Amsterdam Tourist Information, 2007).

The Dutch experience is challenging to characterize, because it is a moving target. In 1995, the 30-gram limit was reduced to 5 grams, and a 500 gram limit was set for coffeeshop stocks. And since the late 1970s, a set of guidelines has emerged for regulating the technically illicit retail sales in open commercial establishments. As formalized by the Public Prosecution Service, coffeeshop owners are not to be prosecuted for selling cannabis providing they comply with five rules (the so-called "AHOJ-G" rules):

1. Sales limited to 5 grams per person per day
2. No sales of other drugs

³ This section is adapted from the more comprehensive essay, "What Can We Learn from the Dutch Cannabis Coffeeshop System?" (MacCoun, 2011), which documents in greater detail the statistical results mentioned here.

3. No advertising of cannabis
4. No nuisance to neighbors
5. No sales to minors below age 18

The shops are allowed to keep up to 500 grams of cannabis without risking arrest or prosecution (Openbaar Ministrie, 2010).

In 1997, officials began closing coffeeshops for non-compliance with these rules. Between 1997 and 2007, the number of retail cannabis outlets dropped 40 percent, from 1,179 to 702 (Bieleman et al., 2009).

A significant new development was the Dutch cabinet's announcement on 27 May 2011 that the coffeeshops would be run as private clubs for Dutch citizens. (Ministry of Security and Justice, 2011). Memberships per club will probably be initially capped at 1500, and foreign visitors (even those from the EU) will be excluded. The Cabinet cited nuisance, sales to tourists, and increases in problematic use by youth, but the rising influence of Geert Wilders' far-right party was surely a factor as well. What is striking is that the policy shift doesn't actually eliminate the "backdoor problem" that many see as an unworkable contradiction. Rather, the Dutch have essentially internalized the contradiction, accepting it for their own citizens but no longer allowing it to influence foreigners.

Are the Dutch more likely to use cannabis? MacCoun (2011) compares various data sources documenting marijuana prevalence in the Netherlands, other European nations, and the US. Recent US and Dutch rates are roughly equivalent within sampling and measurement error, and both the US and the Netherlands rank high relative to most other nations. But in recent years many European countries have rates of student marijuana use that either match or exceed the Dutch rate – including Italy, Belgium, Ireland, the UK, France, and Switzerland.

By facilitating relatively easy access to high-potency cannabis, one concern is that the Dutch system might alter the intensity and duration of a cannabis using "career" but available data do not support this. First, MacCoun (2011) showed that the past-month use rate among Dutch students is quite close to what we would predict knowing only their lifetime prevalence rates. And when the data include adults, the Dutch "continuation rate" is actually lower than one would predict based

on similar rates in other countries. Second, MacCoun (2011) showed that Dutch users appear to "mature out" of cannabis use at a faster rate than their American counterparts. Finally, a comparison of regular users in Amsterdam and San Francisco (Reinerman, Cohen, & Kaal, 2004) found quite similar rates of self-reported use.

On the other hand, MacCoun (2011) estimates that Dutch cannabis users have a higher probability of being admitted to treatment for cannabis use than is true for most countries in Europe. This could reflect a greater need for cannabis treatment in the Netherlands, but that is difficult to reconcile with their relatively modest cannabis continuation rates (relative to Europe) and quantities consumed (at least relative to San Francisco. One possibility is that the Dutch are more generous and proactive in providing treatment. Reuter (2006) estimates that the Dutch government spends about 9,200 euros per "problematic drug user" on treatment; the comparable estimate for Sweden – a country with an active coerced treatment tradition -- is about 7,600 euros. MacCoun (2011) calculates that once criminal justice referrals are excluded, there are about 6 admissions per 1000 past-month users in both the US and the Netherlands.

As noted earlier, a key part of the rationale for the Dutch coffeeshop system was the hypothesis that "separating the markets" would weaken the statistical "gateway" association between cannabis and hard drug use. Figure 5 presents the ratio of people who have tried cocaine (top panel) or amphetamines (bottom panel) to those who have tried cannabis in various European national surveys over the decade 1998-2008. (Heroin use is too rarely reported in the surveys to permit a similar estimate.) The estimates all suggest that cocaine and amphetamine use are below what one would predict for the Netherlands. Though hardly conclusively, these data are consistent with the notion that the coffeeshop system might "weaken the gateway."

The results presented so far paint a fairly favorable picture of the Dutch model, but an important counterfactual question is: How would Dutch outcomes look if they hadn't adopted this approach? That question is difficult to answer. Peter Reuter and I (MacCoun & Reuter, 1997, 2001) have suggested that Dutch cannabis system emerged in two phases with distinct effects – an initial “depenalization” phase with no detectable effects on cannabis use, and a second phase (roughly 1984 and 1996) in which the percentage of 18-20 year olds who had ever used cannabis rose from 15% to 44%, with past-month prevalence rising from 8.5% to 18.5%.⁴ During this latter period, prevalence trends were either flat or declining in most other countries. We characterized this period as the Dutch “commercialization era,” arguing that it was plausibly attributable to the rapid expansion of retail cannabis outlets, at least in Amsterdam.

This commercialization thesis has been debated in the literature (see MacCoun, 2012). The available data fall well short of what contemporary methodological standards require for strong causal inference. But additional correlational support has emerged. Between 1997 and 2005, past-year use among Dutch 15-24 year olds declined from 14.3 to 11.4 percent, during a period when other European countries (Germany, Spain, Italy, and Sweden) were seeing increases. Although it is difficult to establish causation, note that the legal age for coffeeshop purchases was raised from 16 to 18 years in 1996 (Monshouwer et al., 2011), and as noted above, this is a period in which the number of cannabis coffeeshops dropped nearly 40 percent. Thus it is plausible that the Dutch have a higher cannabis prevalence than if they had simply decriminalized possession without permitting retail sales.

Still, any effect of Dutch commercialization is probably much more muted than what one might expect under a full market model. As discussed above, it is very likely that full-scale legalization would significantly reduce cannabis prices. But the Dutch do not have a true legalization regime; it is best characterized as “de

⁴ The timing of this jump is more notable than its magnitude; Beau Kilmer points out that while he was in high school, past-month use rose from 8.1% to 19% -- without any obvious policy explanation.

facto" legalization, and even then, only at the retail level. Using the most rigorous estimates of US (Kilmer et al., 2010) and Dutch (Hazekamp, 2006; Pijlman et al., 2005) prices on a purity-adjusted basis, MacCoun (2012) estimates that Dutch and US prices are roughly equivalent; at most the Dutch prices are only slightly lower. The Dutch price data include retailer markups to cover the costs the owners incur in operating retail outlets in commercial neighborhoods. But it is also likely that prices in the Netherlands are elevated by their unusual hybrid regime which approximates legalization at the user level, but European style prohibition at the level of the growers and traffickers – with coffeeshop owners in a grey area somewhere between. If high-level Dutch traffickers face an enforcement risk, they presumably pass this along in higher prices down the supply chain (Reuter & Kleiman, 1986). The Dutch are clearly enforcing prohibition at the higher end of the supply chain (MacCoun, 2011). This presumably raises prices for consumers.

Assessment. Dutch citizens use cannabis at more modest rates than some of their neighbors, and they don't appear to be particularly likely to escalate their use relative to their counterparts in Europe and the US. Moreover, there are indications that rather than increasing "the gateway" to hard drug use, separating the soft and hard drug markets possibly reduced the gateway, though it is difficult to test this argument with any rigor. But there is circumstantial evidence that the Dutch retail system increased consumption, especially in its early years when coffeeshops were spreading, open to 16 year olds, and advertised more visibly than they do today. And if so, this increase occurred in a hybrid system in which high-level enforcement probably served to keep prices from dropping the way they might in a full-scale legalization scheme. The Dutch system is ambiguous by design, and it is ambiguous in ways that give officials leverage over prices and sales in ways that might be far harder to achieve in a full-scale legalization regime.

Cannabis Clubs and Licensing Models

In the 1990s, drug policy analysts (Kleiman, 1992; MacCoun, Reuter, & Schelling, 1996) discussed the notion of user licenses, somewhat analogous to driver's licenses. The idea was mostly a theoretical abstraction. But some forms of

licensing have emerged as a viable policy option: buyer or grower collectives. Under this model, a buyer (or perhaps, a grower) must join a quasi-regulated, not-for-profit organization that grows and/or provides cannabis for its members.

Cannabis social clubs have operated quasi-legally in Spain since 2002; there are now several hundred of them (Alonso, 2011). Thus far, they have withstood legal scrutiny, though authorities haven't pressed the issue. Some are already paying taxes. Alonso (2011, p. 7) wryly observes:

By some strange legal fate, the global prohibition of drugs applied by the Spanish courts with the view that its goal is to protect consumers from the risks of drugs has given place to a strange protectionist market for cannabis, where there is economic activity but no profit, entrepreneurs but not businessmen, and cooperative[s] of consumers who are associated with small scale cultivators, that function separately from the major distribution outlets and the economy.

Cannabis clubs have been under discussion in the Netherlands (Everhardt & Reinking, 2011), and such plans are likely to gain momentum as the Dutch model moves away from a commercial model centered on tourist sales (MacCoun, 2011).

In theory, cannabis clubs share many of the benefits of a licensing model, though it is not clear whether anyone in Spain has actually "lost their license." But theoretically, cannabis clubs can scrutinize potential users, informally police existing users, and exert peer pressure on members in order to keep the club in good standing. (Think of condominium associations.) Those without a license can still seek cannabis in the black market, but the clubs have the potential to weaken illicit supply chains.

Conclusions

At the time of writing, it is not yet clear whether California (or other states) will have a legalization initiative on the 2012 ballot, though it seems very likely. It is even less clear what form such an initiative will take. One hopes that the authors and sponsors will try to learn from the shortcomings of Proposition 19 – for the public good and for improved political viability.

There are design options that can improve on the full market model envisioned by Prop 19. But this essay shows that there are a variety of partial and non-market models as well. Even in the absence of a change in cannabis laws, there are signs that medical marijuana distribution, at least in some California cities, may be evolving away from a strict prescription model. What it is evolving toward is less clear, but one can already see elements of home cultivation, Dutch-style cannabis coffeeshops, and recreational cannabis clubs.

In Table 2, I offer a tentative summary of the major strengths and weaknesses of each model.

Table 2. Assessing the Models

MODELS	STRENGTHS	WEAKNESSES
Taxed and regulated legal market	<ul style="list-style-type: none"> • Provides revenue stream for the state • Taxes help to internalize the externalities • Taxing by THC:CBD content discourages higher potency plants • Significantly curtails black market • Permits labeling and quality control 	<ul style="list-style-type: none"> • Legal mass production will significantly decrease price • Difficult to regulate as industry gains economic and political power • High risk of state/federal legal conflict
Dutch-style de-facto legalization of retail sales	<ul style="list-style-type: none"> • Enforcement threat limits aggressive marketing, industry political power • High-level enforcement raises prices • Significantly curtails black market 	<ul style="list-style-type: none"> • “Backdoor problem” creates legal and political ambiguity • Uncertain state revenue stream • Moderate risk of state/federal legal conflict • Restrictions on advertising may be difficult given US free speech rights
Legal (or weakly sanctioned) home cultivation	<ul style="list-style-type: none"> • No promotion or advertising • Weakens black market 	<ul style="list-style-type: none"> • Some risk of organized crime, diversion to black market • No state revenue stream

Buyer/grower clubs, licensing schemes	<ul style="list-style-type: none"> • No promotion or advertising • Weakens black market • Easier to monitor and enforce than home cultivation 	<ul style="list-style-type: none"> • Some risk of organized crime, diversion to black market • No state revenue stream
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The evidence to date is far from definitive (and almost completely lacking for cannabis clubs). And each of these models has identifiable drawbacks. But perhaps the perfect is the enemy of the good. It seems likely that these alternatives to the full market might permit adult cannabis use in ways that pose less risk to public health and public safety.

Arguably, it is not legalization per se but rather commercialization that poses the greatest health and safety risks. Commercialization promotes use, encourages price competition (and perhaps high-potency products), and empowers the supply industry, enabling it to resist regulatory efforts (MacCoun & Reuter, 2001). Non-market and partial market alternatives limit industry power, permit regulatory controls, and can help to reduce the salience of cannabis. The catch is that they also offer less promise of revenue generation at a time of stark budget deficits.

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