On Cannabis in Australia - We stand at the crossroads

A submission to the Western Australia Legislative Council Cannabis and Hemp Select Committee

David B. Smith, January 2022

>> Don't panic, it's organic! <<

This submission is offered to address the following terms of reference.

> **Cannabis and Hemp Select Committee Terms of Reference**
>
> (2) The Select Committee is to inquire into and report on the potential to amend the current legislation and regulations which apply to cannabis and hemp in Western Australia, with particular reference to —
> - (a) the current barriers to pharmaceutical and nutraceutical use of cannabinoid products;
> - (b) medicinal cannabis, its prescription, availability and affordability; and
> - (c) the potential benefits and risks of permitting industrial hemp for human consumption.

Preamble

Sub-clauses (a, b, and c) in these Terms of Reference (TOR) are somewhat intertwined, and could well be dealt with in a group, as addressing one in most cases goes some way toward addressing one or both of the others also. Having said that, I will in this paper outline three broad sections each of which leans toward addressing one of the three listed sub-sections , whilst asking those considering this submission to keep in mind the overlap between them. This overlap may be touched upon in each sub-section, but will later be tied together to form a a complete, coherent narrative.

I have a long and extensive personal history with cannabis, both in researching its usefulness to humankind, and with much experience having used this herb myself, over many years. More on that farther down in this paper, as relevance deems appropriate.

Most of my own commentary is easily verified or self-evident. I will not burden the reader with quotes and references too numerous, or obvious, or easily verified elsewhere. I shall use specifically referenced material sparingly, as seems appropriate. This paper needs to be able to be read and understood not only by the Cannabis and Hemp Select Committee members, or by academics, or politicians, but also by anyone with a serious interest in cannabis legislation, or indeed a finger in one of the many many pies seasoned with cannabis legislation. As such I have chosen a style which is personable or conversational, yet academically sound where needs demand.

Most importantly I write this as an ordinary citizen, one of millions of Australians whose lives would benefit through a relatively simple change in legislation, and also (perhaps less simple) a

change in public attitude. We need to stop snickering about "drugs" and get on with improving the lives of millions of Australian citizens.

A little relevance regarding the author

I began using cannabis regularly in the early 1980s, began researching cannabis (largely in scientific papers and various government publications) in the 1990s, and ran as an independent candidate in the 1996 federal election (in the then federal seat of McMillan) on a drug law reform/social justice platform. I have a diverse work history (long having considered myself a "workaholic") which includes operating various industrial equipment, driving trucks, and driving passenger busses and coaches.

I was also an integral member of a rural road accident rescue crew (think "jaws of life") **for well over a decade, frequently driving under EVS** (Emergency Vehicle Status aka "lights and bells") **conditions, and at times assisting police with accident investigations. As a former first responder having witnessed much road trauma, I take road safety very seriously indeed.**

Having ceased social cannabis use around a decade ago, **I recently started using prescription medicinal cannabis for chronic pain relief, successfully ending over a decade of prescribed opiate use, with same.** I continue to drive my car ***when unimpaired*** (but at times at risk of failing a roadside drug test) and function reasonably well, given my significant health issues. **I am still opioid free, and my pain is well controlled with cannabis oils**, a much safer option in my case than opioid medications.

Committee Terms of Reference (2) (a) the current barriers to pharmaceutical and nutraceutical use of cannabinoid products

Weed barriers

- **The most significant barrier to utilising cannabis *for any reason* is its legal status.**

This status of 'prohibited substance' has been maintained only for the past century or so, largely with the help of further inhibitors to the legitimate use of cannabis, **misinformation, and ignorance**.

I don't mean "pig-headed" or wilful ignorance (though to be sure, that can be a factor also), but I mean in the literal sense of simply not being aware of the amazing history of the use of this plant, or of the potential benefits to humankind of allowing its many qualities to be utilised.

- **To alter or not, the legal status of cannabis, one should first be acquainted with facts, and that necessitates addressing voluminous misinformation and ignorance.**

It has been extensively documented that for many thousands of years, cannabis has been used for medication, recreation, and industry. This knowledge has been largely suppressed and much valuable knowledge lost, since cannabis prohibition.

In the West, cannabis was a major player in many pain and other medications over several centuries, frequently alongside opium. It was not considered a danger within our society until the USA embarked on what is now often referred to as the "Reefer Madness" propaganda

(literally) campaign (after the 1936 film of the same name[1]) last century. This campaign saw the terms "cannabis" (C. Sativa, C. Indica, C. Ruderalis) and (cannabis) "hemp" dropped from public use and replaced with "marijuana", a Mexican slang word for cannabis, and this "marijuana" was touted as a most dangerous drug, brought to the USA by Mexican immigrants. The race card, played by experts. But that's a-whole-nother paper.

By the time the 1937 *Marijuana Tax Act* effectively made possession of cannabis illegal across the USA (note both the name and the department of government responsible), many did not realise that their **medicine, cannabis**, was now illegal to have. As a result, there are plenty of folk (and this includes some health professionals, unfortunately) **who simply know no better than to think cannabis is dangerous, and that it should be heavily regulated, prohibited from any form of consumption, that it holds no redeeming qualities**.

- **Nothing could be further from the truth.**

It is also very well documented that cannabis has only endured such harsh treatment *globally* in the past century or so, said treatment having stemmed primarily from the USA at around the time of the repeal of alcohol prohibition in that country. What a remarkable coincidence. There's a-whole-nother paper there too.

We also need to address inaccurate information, or more aptly *misinformation*, regarding the health effects of cannabis, especially those seen as detrimental thereto, so follows here a quick primer.

- **It is well documented that it is all but a physical impossibility to die from the effects of ingesting THC.**

People simply don't die, from the toxicity of imbibing large amounts of cannabis. In a toxicity sense, it is one of the most benign substances on the planet. One can (and some have) die from ingesting too much water. Death due to over-hydration, is a thing. Who knew? Not so for cannabis, as one could not likely ingest the huge quantities (of pure THC) over a period of mere minutes, required to overdose. It simply has not been documented that it has ever been done. There are scant scholarly articles on cannabis toxicity which dispute this claim, but after much research into the references frequently cited by same, it appears that two men are "assumed" to have received a toxic dose of cannabis, after other possible causes of death had been ruled out. Two. Assumed.

"LD50" levels (LD50 is a commonly used figure meaning "Lethal Dose 50% of the time" or that "at this level, 50% of subjects will die") claimed for cannabis toxicity vary wildly, and are extrapolated from experiments with rodents and monkeys. Why? Because people just don't die from having too much cannabis. They are much more likely to fall to sleep, and wake up a day or two later with an insatiable appetite. I am not claiming that it cannot cause serious trouble for those with comorbidities, but on its own, cannabis does not kill. Yet for decades now, any attempt to legalise the use of cannabis even for medicine, has had to fight against the following absurdity:

- **Cannabis has had to be shown to be more benign than water, before any move toward relaxing prohibition could be discussed.**

1 The 1936 film *Reefer Madness* was also released under the title *Tell Your Children* https://www.youtube.com/watch?v=zhQlcMHhF3w&ab_channel=Inter-Path%C3%A9 (last accessed 2021/12/28)

The main focus for much of this paper will be on driving, and roadside drug testing, as this is an area fraught with misinformation and which often becomes the main focus of groups wishing to prolong prohibition. **It is also an area of particular interest to this author having had much experience as both a professional driver and a road accident rescue first responder, as a consumer of cannabis both socially and more recently medicinally, and an area in which I have also completed significant research, beginning some three decades ago**. And whilst much of the research referenced herein relates specifically to driving and roadside testing for cannabis and other substances, **it is in most cases equally applicable to both medicinal and so-called recreational or social consumption.**

- ***Whether used for medicinal purposes or not, many people who use cannabis also drive, and work, and support families, and generally live life as productive citizens.***

So herein begins a lesson. One should NOT discuss cannabis law reform, without first being reliably informed about cannabis and how it "fits in" to the thousands of years of human use and consumption.

Cannabis is unique

Cannabinoids are chemical constituents unique (in the plant kingdom) to the cannabis plant, many of which are bioactive, or potentially therapeutically active compounds. They include the infamous THC (delta-nine tetrahydrocannabinol or Δ9-THC), CBD, THCA, CBDA, CBN, CBG, to label just a few among up to around 100 or so compounds thus far identified. Cannabis is also usually blessed with a good number of terpenes and flavinoids, many also considered to be "active" in a therapeutic sense. Δ9-THC (hereafter THC in this paper for simplicity, unless otherwise stated) is the one which gets most of the attention and hype, as it is primarily responsible for the "high" associated with cannabis consumption, commonly referred to as the psychoactive, or psychotropic, effects.

BUT – and here's where it gets very interesting - there are (thus far identified in nature) **two** basic types of cannabinoid, **phytocannabinoids** and **endocannabinoids**.

Tell the wowsers we are wired for weed

- ***Phytocannabinoids*** **are plant produced and unique to cannabis.**

- ***Endocannabinoids*** **are produced within the human body, and those of most vertebrates.**

It seems we truly are "wired for weed". Read on, because this is fascinating stuff. Our body, and that of most mammals, sports what is scientifically/medically known as the ***endocannabinoid system***. Research has shown this to be present in the brain, the central nervous system, most organs, connective tissues, and the peripheral nervous system.

> **Endocannabinoids** are naturally occurring lipid signalling molecules that are found in [the] body, and that **mediate normal physiological functions**. The endocannabinoids appear to have evolved in the brain to maintain biological harmony and to reduce excessive and damaging

> excitability of neurons. They also play a role in neuronal plasticity, that is, how the brain adapts to change.[2] [My emphasis - DS]

The short of it is, we have millions of receptors for cannabinoids throughout our bodies, and in fact we produce our own cannabinoids. **These are involved in much of the essential functioning of many aspects of our being.**

Some schools of thought hold that if our system is lacking or malfunctioning in an area where cannabinoids usually play a significant role (like pain response for example) we may seek out the plant-derived cannabinoids to supplement our own. It is not rocket science but rather medical science, and we are currently testing and using cannabis as a serious and frequently effective treatment option for a good number of ailments, including:

> ADHD, Aggressive Behaviour, Alzheimer's Disease, Anorexia, Anxiety, Arthritis, Autism Spectrum Disorder, Bi-Polar Disorder, Cancer-Related Appetite Loss, Cancer-Related Pain, Chemotherapy induced nausea and vomiting, Chronic Pain, Chronic Regional Pain Syndrome, Crohn's Disease, Cluster Headache, Dementia, Depression, Dystonia, Ehlers Danlos Syndrome, Endometriosis, Epilepsy, Essential Tremor, Fibromyalgia, Inflammatory Bowel Disease, Insomnia, Irritable Bowel Syndrome, Migraines, Mood Disorder, Movement disorders, Multiple sclerosis, Musculoskeletal Pain, Neuropathic Pain, Obsessive-Compulsive Disorder, Osteoarthritis, Palliative Care, Parkinson's Disease, Post Traumatic Stress Disorder, Restless leg syndrome, Sleep Issues, Spasticity, Spondylitis, Tourette's Syndrome, Ulcerative Colitis[3]

The effects of cannabis are not the same for everyone, and some who try it (that which includes THC, which many modern medicinal preparations do not) may be unsettled by the psychoactive effects it can produce especially if they are unprepared for those effects.

Here's where I will expand on driving (and the associated issues like work) as a means of busting much of the misinformation (myths, horror stories, lies) surrounding this most interesting substance.

Driving The Argument

Why focus on driving?

- **Driving is the argument people turn to when all else fails, as a reason to maintain the *status quo* and by extension, as a reason to increase roadside drug testing, and workplace drug testing, and sport drug testing.**

This situation is causing more harm to our society, to our citizens, to our economy, than any cannabis use itself is likely to cause under most circumstances.

Whilst an emotionally charged topic for many, there are some very surprising outcomes for those who look a little deeper into the facts, rather than with pre-judgement and/or a need to support a current world view, to be satisfied with "I already know enough and my mind is

2 Lambert Initiative for Cannabinoid Therapeutics, *The University of Sydney* https://www.sydney.edu.au/lambert/medicinal-cannabis/endocannabinoids.html (last accessed 2021/12/28)

3 Tetra Health Services (Medicinal Cannabis Authorised Prescribers) *What we do* patient information https://www.tetrahealth.com.au/patients/ (last accessed 0201/12/28)

made up". A forensic examination of the facts, *sans emotional baggage*, is demanded, if we wish to appraise a situation well and then act accordingly. Once you undertake to examine the evidence and the following arguments carefully, subjectively, forensically, you could hardly *not* conclude that our current drug laws have passed their use-by date.

Currently, due to its legal status, we are hindering all facets of cannabis research and use. Hindering health outcomes, hindering personal enjoyment, hindering horticultural development, hindering agricultural diversity, and hindering environmental responsibility.

Arguments in favour of such barriers are based frequently on falsehoods regarding driving and cannabis use, and by extension work and cannabis use, family life and cannabis use, and many facets of daily life for millions of Australian individuals who use cannabis.[4]

- **"… but kids will drive around stoned … car crashes will increase ..." etc. etc. *ad nauseum*.**

While driving when significantly impaired by ANY substance is against the law and rightly so, Australian roadside drug testing (for cannabis and amphetamines in the main) *fails to show or measure impairment*, but rather shows some use, at some time, previous to driving. It could have been five minutes ago, or five hours ago, or five days ago, and particularly so with cannabis.

- **Our roadside drug tests make *no distinction* between 'some use (relatively) recently' and 'maggotted (really stoned) and should not be driving'**.

The same absurdity applies with workplace drug testing. Rather than test for impairment, the simple presence of a proscribed substance may see the subject of such test lose their job, their dignity, indeed their livelihood, *all based on a seriously flawed and unjust process*. The cost of this absurdity is horrendous.

The outrageously blatant advertisements put out by the state government in South Australia serve as an open admission that **regardless of demonstrated impairment or lack thereof, you may still lose your licence for having a detectable amount of cannabis or methamphetamine in your system *long after the high is gone***. That's right, **"LONG AFTER THE HIGH IS GONE"**. But don't just take my word for it:

SAPOL "road safety" billboard advertisement.[5]

4 National Drug Strategy Household Survey 2019 - "Cannabis was the most commonly used illicit drug in 2019, with 11.6% of Australians using it in the last 12 months." https://www.aihw.gov.au/reports/illicit-use-of-drugs/national-drug-strategy-household-survey-2019/contents/summary (last accessed 2021/12/28)

5 South Australia Police https://www.police.sa.gov.au/__data/assets/pdf_file/0004/938551/SAPOL0016-regional-8230x2140-A.pdf (last accessed 2021/12/28)

IF ...* they were policing those who were at risk of crashing their cars, as is the case for the demonstrable, quantified risk with consuming given quantities of alcohol, I would applaud such a move.** But, and it's right there in our living rooms[6] and on roadside billboards in living colour, the South Australian campaign "Think! Road Safety" has little to do with road safety, or critical thought, and everything to do with penalising people who are by and large no more of a crash risk than the tired, or the overworked, or the many thousands of people who drive every day with opioids, benzodiazapines, and other prescription drugs in their system, and in most cases far less so. But we'll persecute drivers who have consumed "illicit" drugs, ***long after the high is gone.

Imagine

- **Imagine what would happen if you went to work on a Wednesday Jan 3rd after a public holiday long weekend. You had given the grog a substantial nudge on new year's eve, but had not imbibed since then.**

- **Then imagine getting to work and having to supply a urine sample, or being pulled over at a roadside drug and alcohol screen on the way to work.**

- **Now imagine, if you will, that those tests did NOT measure or prove any impairment, but rather showed that you have a life. That you had hit the plonk on NYE.**

- ***Now imagine losing your job for it. You know, long after the high is gone.***

And though the example given is from South Australia, **every jurisdiction which currently penalises cannabis users with roadside drug testing, is playing a huge part in penalising normal citizens for being caught going about their lives**. South Australia is just blatantly honest (!?!?) about how they misuse our tax dollars.

- **Roadside drug testing has become a case of picking the low-hanging fruit, for police.**

It only stands to reason that if a percentage of drivers take drugs, as there are always a percentage of people who use drugs in our community, then having a relatively simple way of "catching" them, ***regardless of the impact on road safety*** **(none demonstrated, substantiated below)**, is like shooting fish in a barrel. Nice, healthy productive fishes, minding their own business. I can almost hear, nay see, the Keystone coppers running around the barrel, *"pew … pew pew … pew."*

Not only that, but despite the keenest efforts of law enforcement agencies, and others including many (heretofore misinformed) health professionals, and pharmaceutical companies, **there is scant evidence that, having been able to ascertain blood levels of THC in samples, any significant level of impairment has been established in test or real-world subjects for a given blood-level of THC.** These statements need to be qualified with detail (following) but in essence, for people who are regular (NOT novice or occasional) users of cannabis (this includes the vast number of medicinal/quasi-medicinal users), **there is little evidence of detrimental effects of cannabis on driving**, **any more so than the detrimental effects of being tired**, or dare I say of getting lost in one's favourite music, or of having a legal amount of alcohol, benzodiazapines, opiates, or sleeping tablets in one's system, or of arguing with your partner about stopping to ask for directions.

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6 SA Police News (YouTube) - Think! Road Safety - Get Caught Long After The High Is Gone - 24 hours (2021) - Cannabis 30 sec https://www.youtube.com/watch?v=ea-K-4ywEug&ab_channel=SAPoliceNews (last accessed 2021/12/28)

Notice here I am not claiming NO detrimental effects, BUT much sound research including double-blind studies and traffic incident studies with control subjects, have shown time and again that any detrimental effects (for non-novice consumers) are no more serious than the effects of many legal situations people find themselves in yet are not penalised for. It is this which needs to be addressed clearly if we are to understand the implications of cannabis law and its reform.

Studies so numerous we ought be blue in the face

- **"… but we need more studies … we need more evidence … we don't know the long-term effects … *blah blah blah* ..."**

The following study excerpts are of necessity mostly somewhat voluminous, as maintaining context is vitally important in these discussions. It is far too easy to take a small part from a study, and have it appear to say something other than what it actually states, by taking it out of context. **Politicians do that all too often. So too, protagonists of prohibition.** My aim is to expose such misrepresentations of serious science, so that we the people may make **properly informed decisions** about things which affect us not only personally, but which have significant impact on the community as a whole, and that our elected representatives and senators may represent ***our will*** and legislate accordingly.

I remind those considering this submission that **the people I aim to represent here number in the millions[7].** Many of those millions vote.

- **Millions - including our kids, our grandparents, our parents, our siblings and of other fine, productive, upstanding citizens - have used cannabis in the last 12 months. We are not criminals, *per se*.**

But we can be criminalised. We often are. This needs to stop. We are citizens with a right and responsibility to have due input regarding such important matters.

As already mentioned, I shall present numerous driving studies below. They are plentiful, generally well controlled, and the results strike at the very heart of many of the arguments frequently raised to promulgate prohibition. **They address cannabis-related sobriety, abilities and skills, and they have significant relevance to workplaces, to health, and to other facets of daily life.** Misinformation and ignorance abound in this field, and those issues need to be addressed in considerable detail.

Consider the results of an **Australian government published study** from early this century - yes, much of this has been known for decades. It involved close scrutiny of a number of earlier relevant studies, plus the undertaking and evaluation of **a double-blind, counter-balanced, placebo controlled simulated driving study involving both cannabis and alcohol.**

> **The effects of cannabis and alcohol on simulated driving**
>
> The consumption of cannabis and alcohol has been reported to impair simulated driving performance. Drivers who consumed alcohol were involved in more simulated accidents and took greater risks than drivers who consumed placebo alcohol (Arnedt et al., 2000; Stein et al., 1983). The consumption of cannabis, on the other hand, effected driving in a

7 National Drug Strategy Household Survey 2019 op. cit.

different manner, in which drivers were more likely to drive slowly, and braking times were increased, in comparison to the consumption of placebo or alcohol (Tunbridge, 2002; Rafaelsen et al., 1973). **Errors** in variables such as **accelerating, braking, signalling and responding to signs** have been related to **the consumption of alcohol** *than either placebo or cannabis* (Crancer et al., 1969). More errors have been reported after the consumption of alcohol than cannabis in simulated driving tasks; however, when these drugs are consumed together, a cumulative effect has been observed (Crancer et al., 1969; Krueger & Vollrath, 1998; Stein et al., 1983). Stein et al. (1983) reported an increase in simulated accidents and increase in speeding tickets when drivers' blood alcohol levels were 0.10%. Furthermore, the number of off-road accidents was increased at a lower blood alcohol level (0.08%) compared to placebo (Arnedt et al., 2000). Krueger & Vollrath (1998) reported that recent consumption of cannabis improved lane positioning; however, when combined with alcohol, lane position deviated more, and participants drove faster. In contrast, low doses of cannabis alone have been reported to impair lane positioning, produce deficits in speed control, and steering movements (Smiley et al., 1981). The consumption of low and high cannabis alone has also been associated with an increase in vehicle lane weaving (Papafotiou, 2004b). Furthermore, a trend towards greater breaking latency after consumption of higher doses of cannabis has been reported (Ligouri et al., 1998). Generally, the consumption of alcohol increased hazardous simulated driving, and the consumption of cannabis slowed travelling speed (Stein et al., 1983). [My emphasis - DS]

Differences between regular cannabis users and non-regular cannabis users

A pair of studies performed by Robbe and O'Hanlon highlights the contrasting nature of findings across studies (Robbe & O'Hanlon, 1993; 1999). The findings of Robbe and O'Hanlon's (1993) initial study were consistent with the findings of a meta-analysis performed by Berghaus et al. (1995) that provided evidence of a causal relationship between the level of THC in blood and driving performance. Robbe and O'Hanlon (1993) reported that driving impairment is subtle when compared to the impairment that is observed following the consumption of alcohol. The researchers also reported that the adverse effects of THC on driving performance **are *relatively small* when compared to the effects of medicinal drugs and alcohol**, and they suggested that drivers can compensate for the adverse effects of THC by slowing down or increasing their effort. In a later study, however, Robbe & O'Hanlon (1999) found that the impairing effects of THC on driving performance were far greater than the findings of their initial study had indicated. Noting that **the subject group in the latter study was *less experienced* with smoking THC than the subject group in the earlier study**, the authors suggested that ***the contrasting findings across the two studies may be attributable to differences in the subjects' history, or regularity, of THC use***. [My emphasis - DS]

> The suggestion that the effect of drug consumption on driving performance may be dependent on the individual's drug-use history has been supported by a number of findings. Kirk and De Wit (1999) found that **infrequent users of THC experience greater subjective feelings and greater sedative effects than frequent users of THC, when a high dose of D9-THC (15mg) was administered.** When a lower dose D9-THC (7.5mg) was administered, however, frequent users reported higher ratings of subjective feelings than did infrequent users. From these findings, the authors suggested that an individual's history of cannabis use may influence the subjective effects that are experienced after the consumption of cannabis and, in addition, the influence of the drug-use history may be dependent on the dose of drug that is administered. This finding may partly explain why the effects of THC consumption on driving performance have differed across studies. [My emphasis - DS]
>
> The findings of several studies have directly suggested that the effect of THC consumption on driving performance may be **greater for non-regular users of THC than for regular users** of THC (Marks & MacAvoy, 1989; Wright and Terry, 2002, Papafotiou, 2002c). Marks and MacAvoy found that, when intoxicated by either cannabis and/or alcohol, cannabis users were less impaired in peripheral signal detection than were non-users, suggesting that regular cannabis users may develop a tolerance to the effects of cannabis and also a cross-tolerance to the effects of other drugs. Wright and Terry (2002) also provided evidence to suggest that regular cannabis users may develop cross-tolerance to the effects of drugs and alcohol. They found that infrequent cannabis users were more impaired on a tracking task, following the consumption of a low dose of alcohol, than were chronic cannabis users. Given that the study investigated the effects of alcohol on tracking performance, the findings suggested that chronic cannabis use may lead to cross-tolerance to the effects of drugs including alcohol. Finally, Papafotiou et al. (2004c) reported that **non-regular cannabis users**, who had consumed cannabis, **performed worse on a driving simulator task when compared to regular users**. ***Non-regular users*** displayed significantly more collisions and slower reaction times to emergency situations after the consumption of THC. [My emphasis - DS]
>
> The findings of Marks and MacAvoy (1989), Wright and Terry (2002) and Papafotiou et al. (2004c) indicate that driving-related psychomotor skills **may be less impaired for regular THC users** than for non-regular users, following the consumption of drugs and/or alcohol.[8] [My emphasis – DS]

Even back in 2006, it was fairly broadly understood that novice or occasional users of cannabis fared much differently than regular (as is the case in most medicinal cases) users. So what would (some) Aussie doctors have to say on all this? Let's see now:

> **Cannabis pharmacokinetics**

8 *An evaluation of the Standardised Field Sobriety Tests for the detection of impairment associated with cannabis with and without alcohol* - National Drug Strategy [AUS], Monograph Series No. 17, 2006 https://www.aic.gov.au/sites/default/files/2020-05/monograph-17.pdf (last accessed 2021/12/28)

[For the unwashed, this is the branch of pharmacology concerned with the movement of drugs within the body - DS]

Smoking or vaporising cannabis produces a rapid and transient peak in blood and oral fluid THC concentrations. When taken orally, cannabis is absorbed more slowly through the gastrointestinal tract, producing far lower blood THC concentrations. THC is highly lipophilic and is readily absorbed into fatty tissue, from where it can slowly re-enter the bloodstream days or even weeks following cannabis consumption. **Blood THC concentrations are therefore not necessarily indicative of recent cannabis consumption or the amount of cannabis consumed. The mere presence of THC in blood or oral fluid THC does not reliably predict impairment,** *although current mobile drug testing methods and associated laws rely entirely on this*. [My emphasis - DS]

[...]

Driving simulator studies have shown that cannabis increases SDLP in a dose-dependent manner. Other effects of cannabis, such as reduced speed and increased headway (distance to the car in front), are observed in some, but not all, studies. These may be compensatory effects that intoxicated drivers use when recognising their own impairment. [OR they may simply be being more cautious as they're no longer in the blinding hurry that everyone else is in. I might add that the use of the word "intoxicated" in this context, is unscientific, at best – DS]

On-road driving studies are more ecologically valid and therefore generate higher-quality evidence than driving simulator studies. These studies indicate that cannabis-induced increases in SDLP are of a similar magnitude to low-range BACs (approximately 0.05 g/L) [legal to drive - DS], 10mg diazepam [legal to drive - DS] or one night of sleep deprivation[legal to drive - DS]. A recent study involving some of the current authors investigated on-road driving performance in people who use cannabis ***occasionally*** who received 13.75mg THC (within the range of typical therapeutic THC doses in Australia [5–20mg]). Results confirmed modest but clinically relevant driving impairment at 40–100 minutes but not 240–300 minutes post-treatment (Figure 2). These findings are the first to indicate that moderate doses of inhaled cannabis are unlikely to impair driving performance for more than four hours. [My emphasis - DS]

[...]

Medical cannabis and driving

The vast majority of cannabis and driving studies have focused on ***non-medical*** cannabis use and have involved young, healthy **participants who use cannabis *occasionally* and are given THC doses causing robust intoxicating effects (eg feeling 'stoned').** Rigorous experimental studies on the effects of medical cannabis treatment on driving performance in

> patients are urgently needed to better guide policy in this area. [My emphasis - DS]
> […]
>
> As medical cannabis patients typically use cannabis products daily and over prolonged intervals, **they will likely develop behavioural and pharmacological tolerance to THC effects that may mitigate driving impairment**. One key study reported that participants who heavily use cannabis (ie cannabis use on a daily or near-daily basis) **showed no driving impairment** with either 10 mg or 20 mg dronabinol (synthetic THC), while **those who use cannabis *occasionally*** (ie cannabis use <1 time per week) **showed the expected impairment,** particularly at the higher 20 mg dose. This implies that driving impairment is likely to be greatest in the early stages of THC treatment. Doses of THC should be nitrated slowly upwards in patients during the first few weeks of initiation, **and patients should be advised to exercise extreme caution around driving** until their treatment regimen is stable. [My emphasis - DS]
>
> […]
>
> **Conclusion**
>
> Driving is a complex task involving a range of cognitive and psychomotor functions. Any substance that interferes with these functions can be deleterious for driving. The effects of THC on driving are **generally modest** and appear similar to the effects of low-dose alcohol. However, **impairment may be more pronounced and potentially severe in patients who are cannabis-naive or where cannabis is combined with alcohol or other impairing drugs**. Patients using THC-containing products should be advised to avoid driving and other safetysensitive tasks (eg operating machinery) during the initiation of treatment with THC-containing medicinal cannabis products and in the hours immediately following each dose. Patients using THC-containing preparations are also **at risk of testing positive for cannabis in oral fluid *even if they are not impaired***. CBD-only medications appear to pose no traffic safety risk, although CBD is unlikely to ameliorate THC-induced impairment. Up-to-date information regarding cannabis and driving laws can be found on state government websites.[9] [My emphasis – DS]

And then there's this recent research from the USA.

> […]
>
> The lack of correlation between both marijuana consumption and the level of THC in a person's system and THC levels and driver impairment reduces the usefulness of rule-of-thumb guides of impairment. In contrast, many drivers use rules-of-thumb to guide their alcohol consumption. While emphasizing that even low levels of alcohol consumption can cause drivers to be impaired, tables published on the

9 Medical cannabis and driving - Australian Journal of General Practice 2021 doi: 10.31128/AJGP-02-21-5840 https://www1.racgp.org.au/ajgp/2021/june/medical-cannabis-and-driving (last accessed 2021/12/28)

internet suggest that two drinks may place a 120-pound female in breach of the 0.08% BAC threshold and leave a 160-pound male with "driving skills significantly affected." The National Transportation Safety Board has advised that "about 2 alcoholic drinks" within an hour will cause a 160-pound male to experience decline in visual functions and in the ability to perform two tasks at the same time. Based on current knowledge and enforcement capabilities, it is not possible to articulate a similarly simple level or rate of marijuana consumption and a corresponding effect on driving ability.

[…]

Studies of Crash Risk Associated With Marijuana Usage

To date, results from studies that have examined the association between marijuana use and crash risk have been inconsistent. As described in the 2017 NHTSA report to Congress, one study estimated the increased crash risk from marijuana usage at 1.83 times that of an unimpaired driver, while another study found no association between risk of being involved in a crash and marijuana use. Other studies have estimated the increased crash risk for drivers testing positive for marijuana at between zero and three times that for unimpaired drivers, roughly comparable to the increased crash risk of having a blood alcohol content of between .01% and .05%, well below the legal per se impaired level of .08 BAC. **For purposes of comparison, a driver with a BAC of .08% is considered to be five to 20 times more likely to be involved in a crash than an unimpaired driver.** [My emphasis - DS]

… Marijuana-dosed subjects driving in a simulator or in an instrumented vehicle on a closed course **tended to drive below the speed limit, to allow a greater distance between themselves and vehicles ahead of them, and to take fewer risks than when they were not under the influence of marijuana** … Relatively few **epidemiological studies** of marijuana usage and crash risk have been conducted, **and the few that have been conducted have generally found *low or no increased risk* of crashes from marijuana use**. [My emphasis - DS]

[…]

Several factors complicate the effort to determine what, if any, impact marijuana usage has on the likelihood of being involved in a crash. Chief among these factors is the distinction between correlation (things that occur together) **and causation** (one thing that causes another thing). A driver who has been involved in a crash may have used marijuana shortly before the crash; that correlation (marijuana usage and crash involvement) does not alone prove causation (that the marijuana usage was the cause of the driver being involved in a crash). For example, in the United States the population group with the highest rate of motor vehicle crashes, by far, is young male drivers (generally defined as those between the ages of 16 and 19). Young males are also the population group with the highest prevalence of marijuana use. When a young male driver is involved in a motor vehicle crash, and has

> recently used marijuana, **it is difficult to separate the role, if any, of the effects of marijuana usage from the other factors that may contribute** to the exceptionally high rate of crash involvement of young male drivers. [My emphasis - DS]
>
> […]
>
> The decision as to whether a driver who tests positive for marijuana should be arrested or charged with driving while impaired is not straightforward, **because tests for the presence of marijuana in a driver's body are inadequate to determine impairment**. The value of testing a person for the presence of alcohol lies largely in the well-established link between levels of alcohol in a person's blood and impairing effects associated with that blood alcohol content. **Similar links between levels of THC in a person's body and levels of impairment *have not been established*.** [My emphasis - DS]
>
> The concentration of THC in a person's blood rises rapidly after consumption, then drops rapidly, within an hour or two. Impairing effects appear rapidly, but may remain for some time. Consequently, tests that show the amount of THC in the subject's body are poor indicators of impairment, how recently a person has used marijuana, or whether the person used marijuana or was simply exposed to second-hand smoke. Moreover, tests can show the presence of metabolites of THC, which themselves are not impairing, for weeks after consumption. Also, studies indicate that **individuals can adapt to the impairing effects of marijuana**, such that *a level of THC that could indicate impairment in an occasional marijuana user may not have the same impairment effect on an experienced user*.[10] [My emphasis - DS]

Study after study find that cannabis, *while certainly of some concern*, is **less likely to be a *cause*** of road trauma than alcohol and many prescription medications especially where experienced users are concerned.

> In this review, state-of-the-art evidence on the relationship between cannabis use, traffic crash risks, and driving safety were analyzed. Systematic reviews, meta-analyses, and other relevant papers published within the last decade were systematically searched and synthesized. Findings show that meta-analyses and culpability studies consistently indicate a ***slightly*** but significantly increased risk of crashes after **acute** cannabis use. These risks vary across included study type, crash severity, and method of substance application and measurement. Some studies show a significant correlation between high THC blood concentrations and car crash risk. Most studies do not support this relationship at lower THC concentrations. However, **no scientifically supported clear cut-off concentration can be derived from these results**. Further research is needed to determine dose-response effects on driving skills combined with measures of neuropsychological functioning related to driving skills and crash risk.[11] [My emphasis – DS]

10 [USA] Congressional Research Service (2019), *Marijuana Use and Highway Safety* https://crsreports.congress.gov/product/pdf/R/R45719 (last accessed 2021/12/28)

11 Ulrich W. Preuss, Marilyn A. Huestis, Miriam Schneider *et al.* (2021) Cannabis Use and Car Crashes: A Review. *Frontiers in Psychiatry* https://www.frontiersin.org/articles/10.3389/fpsyt.2021.643315/full (last accessed

But wait, there's more.

> We highlight two individual cases illustrating how **(i) impairment can be minimal in the presence of a positive THC result, and (ii) impairment can be profound in the presence of a negative THC result**
>
> […]
>
> **Conclusions**
>
> **There appears to be a poor and inconsistent relationship between magnitude of impairment and THC concentrations in biological samples, meaning that *per se* limits cannot reliably discriminate between impaired from unimpaired drivers**. There is a pressing need to develop improved methods of detecting cannabis intoxication and impairment.[12] [My emphasis – DS]

And more.

> […]
>
> To contribute to the ongoing discussion about threshold limits of Δ9-tetrahydrocannabinol (THC) in road traffic, a driving simulator study with 15 habitually cannabis consuming test persons was conducted. Probands were tested on different routes after consumption of a maximum of three cannabis joints, each containing 300 µg THC/kg body weight (sober testing as well as testing directly, 3 and 6 h after cannabis consumption). Accompanying the drives, medical examinations including a blood sampling were performed. Driving faults and distinctive features in the medical examinations were allocated certain penalty points, which were then summed up and evaluated using the ANOVA model. The results showed that very high CIF values > 30 as well as serum THC concentrations > 15 ng/ml significantly increased the number of penalty points, but no direct correlation to the THC concentrations in serum and/or CIF values was detected. Instead, the point in time after cannabis consumption seems to play an important role concerning driving safety: significantly more driving faults were committed directly after consumption. **Three hours after consumption, no significant increase of driving faults was seen**. Six hours after consumption (during the so-called subacute phase), an increase of driving faults could be noted although not significant. Considering the limitation of our study (e.g. small test group, no placebo test persons, long lasting test situation with possible tiredness), further studies focusing on the time dependant impact of cannabis consumption on road traffic are required.[13] [My emphasis - DS]

2021/12/28)

12 Thomas R Arkell, Tory R Spindle, Richard C Kevin *et al.* (2021) The failings of per se limits to detect cannabis-induced driving impairment: Results from a simulated driving study. *Traffic Injury Prevention* https://pubmed.ncbi.nlm.nih.gov/33544004/ (last accessed 2021/12/28)

13 Anne Tank, Tobias Tietz, Thomas Daldrup *et al.* (2019) On the impact of cannabis consumption on traffic safety: a driving simulator study with habitual cannabis consumers. *International Journal of Legal Medicine* https://pubmed.ncbi.nlm.nih.gov/30701315/ (last accessed 2021/12/28)

And yet more.

> **Aim**
>
> We conducted a responsibility analysis to determine whether drivers injured in motor vehicle collisions who test positive for Δ-9-tetrahydrocannabinol (THC) or other drugs are more likely to have contributed to the crash than those who test negative.
>
> […]
>
> **Findings**
>
> We obtained toxicology results on 3005 injured drivers and police reports on 2318. Alcohol was detected in 14.4% of drivers, THC in 8.3%, other drugs in 8.9% and **sedating medications in 19.8%.** There was no increased risk of crash responsibility in drivers with THC < 2 ng/ml or 2 ≤ THC < 5 ng/ml. In drivers with THC ≥ 5 ng/ml, the adjusted OR was 1.74 [95% confidence interval (CI) = 0.59–6.36; P = 0.35]. There was significantly increased risk of crash responsibility in drivers with blood alcohol concentration (BAC) ≥ 0.08% (OR = 6.00;95% CI = 3.87–9.75; P < 0.01), other recreational drugs detected (OR = 1.82;95% CI = 1.21–2.80; P < 0.01) or sedating medications detected (OR = 1.45; 95%CI = 1.11–1.91; P < 0.01). [My emphasis - DS]
>
> […]
>
> **Conclusions**
>
> In this sample of non-fatally injured motor vehicle drivers in British Columbia, Canada, **there was no evidence of increased crash risk in drivers with Δ-9-tetrahydrocannabinol < 5 ng/ml and a statistically non-significant increased risk of crash responsibility (odds ratio = 1.74) in drivers with Δ-9-tetrahydrocannabinol ≥ 5 ng/ml**.[14] [My emphasis - DS]

The following US Senate Bill is the culmination of **three years of work by a huge panel of contributors (at least 66, including 20 or so law enforcement officials, plus lawyers, doctors, advocates, and other experts from various fields)**. The level of expertise is outstanding, and a walk through the Acknowledgements [download the report] makes for interesting reading. Following are just a couple of snippets from the Bill proper.

> **[Introduction]**
>
> On October 3, 2017, the Impaired Driving Task Force (IDTF) convened for the first of nine meetings. Pursuant to California Vehicle Code (CVC) Section 2429.7, the IDTF was charged with developing, "… *recommendations for best practices, protocols, proposed legislation, and*

14 Jeffrey R Brubacher, Herbert Chan, Shannon Erdelyi *et al.* (2019) Cannabis use as a risk factor for causing motor vehicle crashes: a prospective study *Addiction* https://pubmed.ncbi.nlm.nih.gov/31106494/ (last accessed 2021/12/28)

other policies that will address the issue of impaired driving, including driving under the influence of cannabis and controlled substances. The task force shall also examine the use of technology, including field testing technologies and validated field sobriety tests, to identify drivers under the influence of prescription drugs, cannabis, and controlled substances. The task force shall include, but is not limited to, the Commissioner, who shall serve as chairperson, and at least one member from…" specified experts and stakeholder groups, including:

• The California Office of Traffic Safety (OTS).
• The National Highway Traffic Safety Administration (NHTSA).
• Local law enforcement.
• District attorneys.
• Public defenders.
• California Association of Crime Laboratory Directors.
• California Attorneys for Criminal Justice.
• The California Cannabis Research Program, known as the Center for Medicinal Cannabis Research, authorized pursuant to Section 11362.9 of the Health and Safety Code.
• An organization that represents medicinal cannabis patients.
• Licensed physicians with expertise in substance abuse disorder treatment.
• Researchers with expertise in identifying impairment caused by prescription medications and controlled substances.
• Nongovernmental organizations committed to social justice issues.
• A nongovernmental organization that focuses on improving roadway safety.

[…]

Cannabis in California

In 1996, California voters approved Proposition (Prop) 215, the Compassionate Use Act (CUA), which legalized the use, possession, and cultivation of cannabis by patients with a physician's recommendation, for treatment of cancer, anorexia, acquired immunodeficiency syndrome, chronic pain, spasticity, glaucoma, arthritis, migraine, or "any other illness for which marijuana provides relief." Senate Bill 420, Vasconcellos, Chapter 875, Statutes of 2003: Medical Marijuana, established an identification card system for medical cannabis patients and permitted the creation of nonprofit collectives for the purposes of providing cannabis to patients. [My emphasis - DS]

[…]

A positive result for any drug **does not necessarily mean the driver was impaired** at the time of testing, only that the drug was present in the body." Due to the fact ***drug presence does not necessarily equate to impairment***, the report cautions against drawing conclusions about impaired driving from these findings. [My emphasis - DS]

[…]

[Toxicology Recommendations]

5. Drugs affect people differently depending on many variables. A per se limit for drugs, other than ethanol, ***should not be enacted at this time*** as **current scientific research does not support it**. However, the state should continue to advance research in this area, to include methods of evaluating impairment. [My emphasis - DS]

Although some states have proposed or introduced **per se levels for drug impairment, such levels are not yet supported by existing scientific research.** Notwithstanding, continued evaluation of such levels are recommended to better understand how drugs impair a person's ability to safely operate a motor vehicle.[15] [My emphasis – DS]

[...]

One of the most comprehensive, case-controlled studies to date is from the USA Department of Transportation's National Highway Safety Administration. The results, regarding virtually all (non-alcohol) drugs will be surprising to many.

Executive Summary

Background

This Drug and Alcohol Crash Risk Study examined risks associated with drug- and alcohol- positive driving. The study used data from crash-involved and non-crash-involved drivers over a 20-month period in Virginia Beach, Virginia.

[…]

… To increase the precision of the case-control matching, this study collected information from crash-involved drivers, and, one week later, from two control drivers randomly selected from the traffic stream on the same day of the week, time of day, location, and direction of travel as the crash-involved driver. This type of research design allows for a well-controlled, precise matching of crash-involved cases to control cases.

[…]

Objective

The objective of this study was to estimates the crash risk of alcohol-positive, drug-positive, and alcohol-plus-drug-positive drivers using a case-control design. Drugs included **over-the-counter, prescription, and illegal drugs.** [My emphasis - DS]

[…]

15 [USA] Report to the Legislature Senate Bill No. 94. (2021) Impaired Driving Task Force, *California Highway Patrol* https://www.chp.ca.gov/ImpairedDrivingSite/Documents/Senate_Bill_94.pdf (last accessed 2021/12/28)

… Data collection spanned 20 months. Researchers collected data from more than 3,000 crash-involved drivers and 6,000 non-crash-involved (control) drivers...

[…]

Results

Alcohol Crash Risk Estimate

The unadjusted crash risk estimates for alcohol indicated that drivers with BrACs of .05 grams per 210 liters g/210L are 2.05 times more likely to crash than drivers with no alcohol. For drivers with BrACs of .08 g/210L, the unadjusted crash risk is 3.98 times that of drivers with no alcohol. When adjusted for age and gender, drivers with BrACs of .05 g/210L are 2.07 times more likely to crash than drivers with no alcohol. The adjusted crash risk for drivers at .08 g/210L is 3.93 times that of drivers with no alcohol.

Drug Crash Risk Estimates

Drug odds ratio estimates, when unadjusted, indicated an increase in crash risk. For marijuana, the unadjusted odds ratio was 1.25, but after statistically adjusting for gender, age, race/ethnicity, and driver alcohol concentration (AC), **there was no significant contribution to crash risk from any drug**. [My emphasis – DS] The adjusted odds ratios were:

- THC12: 1.00, 95% CI [.83, 1.22],
- Antidepressants: .86, 95% CI [.56, 1.33],
- Narcotic analgesics: 1.17, 95% CI [.87, 1.56],
- Sedatives: 1.19, 95% CI [.86, 1.64],
- Stimulants: .92, 95% CI [.70, 1.19],
- Illegal drugs: .99, 95% CI [.84, 1.18],
- Medications: 1.02, 95% CI [.83, 1.26].

[…]

Conclusions

The study confirmed previous research indicating alcohol is a greater contributor to crash risk than drugs (Bernhoft, 2011; Hargutt, Krüger, & Knoche, 2011; Hels et al., 2011; Romano & Pollini, 2013; Romano, Torres-Saavedra, Voas, & Lacey, 2014; Romano & Voas, 2011; Sewell, Poling, & Sofuoglu, 2009). When age, gender, race/ethnicity, and alcohol consumption are taken into account, **there was no significant contribution of drugs to crash risk.** This finding seems to contradict previous studies (Asbridge, Hayden, & Cartwright, 2012; Blows et al., 2005; Hels et al., 2011) that indicate a statistically significant contribution of drugs to crash risk, even if sometimes small or moderate. However, the strength of this study lays in its rigorous methodology, stringent data collection procedures, controlled case-

> control matching, comprehensive laboratory testing, and sophisticated statistical analyses.[16] [My emphasis - DS]

Tasmanians on cannabis and driving

Tasmania is *the only state in Australia* which has a possible medical exemption from the consequences of a positive roadside drug test.

> **Medicinal cannabis and driving**
>
> Medicinal cannabis **can** cause impairment and affect fitness to drive, and **a person who drives a vehicle while under the influence of a drug *to the extent that the person is incapable of having proper control of the vehicle* is guilty of an offence (even if the drug is prescribed)**. It is recommended that patients do not drive whilst being treated with medicinal cannabis.
>
> THC is the main psychoactive substance in cannabis and is present in some medicinal cannabis products. Driving with any detectable amount of THC in your system is an offence in Tasmania, **unless the product was obtained and administered in accordance with the Poisons Act 1971**.[17] [My emphasis – DS]

Whilst cannabis use in Tasmania is still illegal *per se*, the medicinal use of cannabis, on prescription, is a defence against a positive test *as long as no impairment is present*. **This is a clear indication that presence** (of THC) **does NOT equate to impairment, and recognises a** (prescription cannabis) **user's ability and responsibility to make sound judgements regarding driving and medicinal cannabis. This is the same decision drivers make regarding many other prescription medications including sleeping medications, benzodiazapines, and opiates, all of which can potentially have an impact on road safety.**

Whilst the main focus of the studies above is on the medicinal use of cannabis and driving, it stands to reason that, *so long as one is not impaired*, the exact same judgement should be available to recreational/social users of cannabis. The legal status of the user (medicinal or social) does not change the **fact** that the mere presence of THC in oral fluid (the current roadside drug testing methods used in Australia) says zero about one's ability to drive. Or work. Or function as a normal human being. This must change.

Lived experience

A paper like this would be incomplete without reference to real people. Cannabis legislation, as already mentioned, applies to and potentially affects millions of real Australians. People with lives, with stories. In academia it is called anecdotal evidence, I like to call it lived experience. In a nut-shell, truthful stories (the ones I share here anyhow) involving real citizens, with real lives. Many of them are frankly, sick and tired of being sick and tired. Whilst anecdotal evidence usually takes a back seat to epidemiological evidence, **it is still a**

16 Lacey J H, Kelley-Baker T, Berning A *et al.* (2016) Drug and alcohol crash risk: A case-control study *National Highway Traffic Safety Administration* https://one.nhtsa.gov/staticfiles/nti/impaired_driving/pdf/812355_DrugAlcoholCrashRisk.pdf (last accessed 2021/12/28)

17 Tasmanian Government Department of Health (2021) *Medicinal Cannabis - Information for Patients and Carers in Tasmania* NOTE: This information is effective from 1 July 2021 http://www.dhhs.tas.gov.au/psbtas/medicinal_cannabis/information_for_patients_carers (last accessed 2021/12/28)

valuable tool, and often is the main precursor to epidemiological research, and to changing community attitudes.

And anecdotes abound. Some quite sketchy, some given nervously (due to legal/social/moral considerations), and now more frequently than ever, **honest, reliable, conscientious people who have lived with the desire or the need to use cannabis, many of whom have a long history with this interesting herb, are sharing their experiences.**

Whilst beyond the scope of this paper, and with no desire to test human attention spans with a 300 page tome, such anecdotal evidence as to the efficacy of cannabis improving the lives of millions worldwide, can be found by interested parties without the need to post gazillions of them here. I shall keep anecdotal evidence brief, and largely personal.

Spot the prejudice - a seriously sad anecdote

Speaking of lived experience, I will share here a serious, real life example of prejudicial thinking.

Having just extricated several victims from a serious single-vehicle accident, myself and colleagues were taking in the broader scene. There were the remnants of at least two "slabs" worth of empty beer cans, and other alcoholic beverage containers, strewn in and about the vehicle. The occupants (including the driver) had reeked of alcohol. There was also a bong (cannabis smoking device) amidst the wreckage.

One of my colleagues (who was known to drink socially, but who loudly abhorred "druggies" frequently) pointed to the bong, and pronounced "It's easy to see what caused this accident!" and I was left dumbfounded at the bias this colleague displayed.

I am not suggesting that cannabis had played no part, but it appeared likely also that alcohol had played a significant role, and also that youth and inexperience may have contributed, considering the apparent ages of the occupants. The investigating police, *rightly so,* would (or at least should) wait until blood test results were returned from the driver before determining the role played by any substances, and combine that information with other evidence to determine the likely cause(s) of the accident. **It could well be that the driver was sober and straight, or not.** It mattered not to me at the time, as rescue work is best performed without prejudice.

Driving further discussion

So, what are the take-home points to consider thus far?

Alcohol is by far the most prevalent drug used by drivers and has a significant impact on road trauma levels. Cannabis, and many other drugs and medications, ***demonstrably less so***.

It is advisable, ***if affected***, to not drive within several hours after taking cannabis, and this is particularly important if you are a novice, or only an occasional user, of cannabis. Quite simply if you feel you should not be driving, then don't. **This is the EXACT SAME condition used in the case of a multitude of prescription medications.** ***The presence of these same medications is NOT tested for at roadside testing stations.***

Consider the following.

You can throw a Serepax™ party, include a little Passion Wine™, drive to the bottle-o for a top-up, get breath tested and drug tested, and provided you are not over .05 BAC, you're good to go (as long as you don't appear to be impaired). But partake in cannabis, whether for medication or for social/personal use and enjoyment, yesterday, or maybe last weekend, or even having been in the same room as someone smoking cannabis (passive cannabis ingestion is a thing), and you could very possibly lose your licence, your job, your reputation, and more in some circumstances, for getting tested while you go for fast food for the family, ***and you don't need be impaired, or to look or behave as if impaired, to be the recipient of such life-changing draconian measures!***

Unlike the well-established limits on alcohol use wherein a given BAC level is clearly associated in most people with a given level of impairment, (to driving, to operating machinery, to operating on a patient), **the same cannot be said for roadside drug testing.**

- **Roadside drug tests DO NOT detect the level of a drug, *or* it's associated risk of impairment, but rather they detect the mere PRESENCE of the drug, or of metabolites thereof.**

The presence of a drug does not indicate impairment, *per se*. Consider **yourself**, in the following scenario.

You could have taken a small oral dose of PRESCRIBED cannabis oil (with THC), an introductory dose in the early stages of treatment, one evening. That could be perhaps 5mg of THC at dinner, because as a new patient you were unsure about its effects so you waited until you had no driving or work to do between dinner and bed. The following afternoon you are stopped for a random breath test and drug test. Suddenly your licence, your job, your ability to provide for loved ones, could all be taken from you (ILOL – Instant Loss of Licence now applies in South Australia if any proscribed drugs are present in a roadside drug test[18] - there's a-whole-nother paper there, methinks), and you cannot, at this time, claim a medical exemption from the consequences of returning a positive test (except in Tasmania).

- **There is no requirement for police to show or prove any impairment. This is an absurdity**.

If roadside drug testing were definitive regarding driver impairment, I would applaud it. The sad reality is that this is NOT the case.

BUT we should not stop the discussion there, because whilst it is obvious that we desperately need a change to the rules to allow for the responsible medicinal use of cannabis, **it is also patently absurd that people of all walks of life who use cannabis for personal reasons with little adverse health or safety ramifications, often for decades, can be literally demonised when there has been NO establishment of their being too impaired to drive, or to operate machinery, or to carve the Sunday roast.**

We need to stop talking about this in whispers and behind closed doors. We need to educate the general public, and cannabis users, about any potential risks of cannabis consumption to road safety. For example, **a novice user of cannabis will likely be much more negatively affected by it than a regular user**. Whilst users do often experience SOME measurable impairment of driving related skills, **seasoned users are usually quite adept at making**

18 Vincent Tarzia MP (30/11/2021) Road Safety Minister, Government of South Australia media release, *Drug drivers on notice – risk it and lose your licence… or your life* https://www.premier.sa.gov.au/news/media-releases/news/drug-drivers-on-notice-risk-it-and-lose-your-licence-or-your-life (last accessed 2121/12/28)

changes to their driving, to compensate for those skill deficits. This is borne out in countless studies, including a comprehensive *on-road* study[19] carried out in the Netherlands. A well-measured example of this is the observation that chronic users will usually drive a little slower when affected, leave more distance to the traffic they are following, and are less likely to engage in risk taking behaviour than alcohol affected persons. We need to stop pointing the finger at "dangerous druggies" on our roads, whilst we happily zoom-zoom around on Zoloft™.

- **It must be noted that even the affected *novice user does better in driving tasks* than a driver affected by having the maximum *legal amount* of alcohol in their blood.**

So, whilst SOME impairment is demonstrated in a number of studies, **it is consistently *below* the impairment displayed by drivers under or up to 0.05 BAC**.

While cannabis is predominant in road crash statistics, **correlation is not causation**. Cannabis would also be predominant in almost any tested cohort of people, as ***cannabis is predominant in the community, in spite of its current legal status!***

- ***There is no evidence that cannabis alone is a serious traffic safety concern for most experienced, responsible users.***

There are always people on the road with drugs of many types in their systems. Whilst those on other prescription drugs are free to make an assessment of their ability to drive, **those using prescribed cannabis medications, or indeed other users of the herb, are not free to make the same decision, *despite there being ample evidence* that this would be the responsible and reasonable approach to take.**

Committee Terms of Reference (2) (b) medicinal cannabis, its prescription, availability and affordability

My lived experiences with *medicinal* cannabis.

Some years ago, I developed Fibromyalgia, characterised by severe joint/muscle pain, and was after confirmation of diagnosis, prescribed a strong, sustained release opioid medication. It was not long before I was (predictably) on the maximum allowable dosage, my (then) GP having to get each script "authorised" by phone. I was one step short of morphine, and that's not somewhere I wanted to go. So, I put up with much of the excess pain, for years, often taking prescribed (and then available over-the-counter) codeine containing medications (more opioids), to deal with "break-through" pain. Until break-through pain became the norm, and I began searching for alternatives.

During this time, I changed GPs. This was not a sought after change of clinics, as my then long-term GP left the practice I frequented and moved elsewhere, and I decided as the practice had my long-term records, I'd strike up a rapport with a new long-term GP. My (now) GP has known of my desire to use less opioids for some years now, and of my conscious decision to "tell all" as I have with doctors through most of my adult life, and that I have used the same one local pharmacy for many years, except where circumstances required a change (travel, etc). He knew I had used cannabis "socially" for many years, many years prior. **So here I was,**

19 Thomas R. Arkell, Frederick Vinckenbosch, Richard C. Kevin, et al (2020) Effect of Cannabidiol and Δ9-Tetrahydrocannabinol on Driving Performance - A Randomized Clinical Trial *JAMA (Journal of the American Medical Association)* https://jamanetwork.com/journals/jama/fullarticle/2773562 (last accessed 2021/12/31)

looking for an opioid alternative for pain relief, and my GP was cautiously willing to supervise my journey. Enter cannabis, via the Therapeutic Goods Administration (TGA).

When I first heard of cannabis becoming legally available in Australia as a medicine, I did not think too seriously about using it for pain relief, as my previous personal experience with cannabis had not been for that purpose, and preliminary enquiries revealed that it was quite an expensive treatment option. I am on a Disability Support Pension (DSP) and cost matters, a lot.

Then I learned that cannabis had been used with much success for pain relief for fibromyalgia sufferers. A benefactor offered to pay for my initial trial of cannabis as medicine, and continues to assist with prescription costs where necessary, and **I quickly found that it was a better chronic pain-relief medication, for me, than any I had tried previously. So much so that I weaned myself off opioids, under my GP's supervision, in little more than a month.**

My GP, who knew little of the medicinal potential of cannabis when I first broached the topic with him, has been supportive of me choosing to trial this alternative. I made sure at first to respectfully refer him to some scientific medical research and other scholarly sources on cannabis use, in the main from medically trained persons who have themselves often been surprised by the efficacy of cannabis being trialled and used to treat or to help treat a wide variety of conditions. The change was dramatic for me, to say the least.

BUT here's the rub.

- **It is far too expensive at its current pricing, for most bar the relatively well-off, to continue with cannabis as a treatment regime, if the current "legal" prescription route is maintained.**

I can, very easily, obtain high quality oil that has been home-made, not "commercially" or for criminal profit, but out of necessity, from black market sourced cannabis.

- **"… but it's impure ... we don't know enough about it … it could be too strong ... etc. etc." *ad nauseum***

Many proponents of prohibition forget that **we've been using this stuff *FOR THOUSANDS OF YEARS*** culturally, socially, and medicinally. I myself have been aware of how hashish was made, since the 70s. Hash oil too, has been 'a thing' for as long as I've known of cannabis, and for thousands of years prior.

- **"… but what about the strength ... kids will OD ... a whole generation will be lost ... *waffle waffle some meaningless twaddle"***

Again, people have been making cannabis preparations for thousands of years. From the heads (flowers, bud) to hashish, hash oil, bhang (a cannabis drink) - I bet you did not know that Bengal means "bhang land" and Bangladesh translates literally as "bhang land people"[20] - to poultices and myriad other preparations, **we have been preparing and using cannabis without serious detrimental effect in the vast majority of cases, *for as long as we've been using the wheel***. Aspirin kills thousands of people each year. Cannabis, none. Go figure.

20 Robinson, R. (1996). The Great Book of Hemp: The Complete Guide to the Environmental, Commercial, and Medicinal Uses of the World's Most Extraordinary Plant. United Kingdom: *Inner Traditions/Bear* https://www.google.com.au/books/edition/The_Great_Book_of_Hemp/w0qvkVGO0sgC?hl=en (last accessed 2021/12/28)

Lord, give me strength

More on the "strength" issue, which is largely fluff and noise to an old-timer like myself. Proponents of prohibition, and some others who simply know no better, claim that advances in understanding of the biology of cannabis, have made modern cannabis much more potent than it was say, 30 years ago. Or 50 years ago. You can pluck a figure out of thin air, others surely have! **The answer to this wishy-washy- yet alarmist claim is manifold, but I'll try to keep it simple. Some of these horrific high potency claims are laughable, for several reasons.**

Firstly, if you'd ever mixed it with Rastafarians, or ridgey-didge hippies, or ever experienced the imported compressed head back in the eighties, or had buddha sticks, or been fortunate enough to have had the good old "Lebanese Gold" hashish, you would at the very least raise a questionable eyebrow at modern potency claims. Let me tell you, **some of those products literally 'put you on your arse'**, for hours on end, and you would likely not want to drive for a while after imbibing. Those were the daze.

The wowsers promoting thigh potency horror stories always have a dubious study or two up their sleeve. Some of those studies I have read, and figures quoted therein, are at best, lacking in rigour. Claims like "it used to be 3% (THC) and now it's 30%" are wildly inaccurate, usually a case of comparing oranges to apples. Or more appropriately, comparing leaf, or crappyily - if that's even a word - rolled US government supplied joints, to the latest in specialty-grown bud (flower).

Secondly, **IF it were now significantly stronger**, and potency does appear to be increasing mildly but not alarmingly so, **that would be a good thing**. Less "harmful smoking" for the same effect, or less oil for the same effect, less medicine for the same effect, it all adds up to being better for us, to the degree that such claims pan out. Yet we can go buy a bottle of over-proof rum and drink ourselves into a coma.

The idea of having stronger grog, is to use less of it. To savour it. Many drinkers fail to recognise this, however. But that's ok, at least they're not druggies. Many drunks will vomit behind your couch but that's ok, at least they're not druggies. Many drunks will take a slash on the front porch thinking it's the can but that's ok, at least they're not druggies.

News flash! **They *ARE* druggies!** At the tender age of eight or nine, I was told about caffeine. Though I made great (instant) coffee - great instant coffee, now there's an oxymoron - for the parents and visitors, I could not partake until I was 10 because it contained caffeine, and then only one cup in a day. And NOT if I also had Coke™, as that contained the drug caffeine too. And "go easy on the sugar, it'll send you silly"…

- **Caffeine was my GATEWAY DRUG, whatever that means.**

Not tobacco, not alcohol, and certainly not cannabis. Up until I turned 10, because I made such good coffee, I was allowed at times, to "drink the dregs" as awful as that sounds, left by the adults. A quarter or half-inch or so in the bottom of one or two cups. I became addicted. I still am. To coffee.

The high price

So what does this prohibition of cannabis and the current red tape needed for medicinal use, result in for many thousands of users just like myself? **Even once we have a prescription for**

cannabis, many of us still can not afford to use the prescribed quantities we need. My own preparations (I use oils to avoid smoking as I also have COPD) can cost up to $250 a month or more, and my dosage is not considered particularly high, compared to some.

I do not take enough cannabis to maintain a pain-free status, but rather keep my pain well-controlled, far more so than I could with opioids. I can not afford $250/month on the DSP regardless of the efficacy of cannabis, for me. For comparison, opioids were costing me around $6 to $20 a month (subsidised on the PBS) when I used them.

I can however, and indeed have on occasion *out of necessity*, procured black market cannabis oils, of surprisingly high quality, for less than half the price of similar pharmaceutical products. And they works. They works as well, even arguably better, possibly due to the fact that **privately sourced oil is "broad spectrum" keeping much of the terpene and flavinoid content intact, which many of the pharmaceutical products do not.**

Yet black market forces, a direct result of years of prohibition, keep the price of privately sourced cannabis at an artificial high. If we were allowed to grow it ourselves (those who wish to), **the black market, and much of the organised crime which it underpins, would collapse. Why do we wait?**

I am not Robinson Crusoe. I have known many hundreds if not thousands of cannabis users in my life, who use for many different reasons, be they medicinal, quasi-medicinal, social, personal, and who live productive and socially acceptable lifestyles (whatever that means) without issue except for those they face based on the legality of cannabis and the ignorance of those who seek to maintain the status quo of prohibition.

And price is a serious problem, for medicinal or non-medicinal users alike. Now I get it, that the companies providing pharmaceutical grade material need to make money. But we should be afforded affordable choices. And cannabis happens to be very easy to grow, in the main. With the huge expansion of both legal and illegal availability recently, globally, **there are many regular people producing cannabis of outstanding quality,** and with particular traits (CBD dominant, THC dominant, a fruity aftertaste, etc.), in the home, the garden, the shed, a cupboard, on a window sill. **And in many cases, this is in spite of the potentially serious criminal consequences of being "caught".**

- **Prohibition is simply not working, and it keeps the price of cannabis at an artificial high.**

This is especially of significance for medicinal users, as **they often need to choose between pain relief, and food. Or between seizure relief, and electricity. Or between crippling MS symptoms and going for a drive with the kids. Or between a $300 consult fee plus $250/month, or supporting illegal production at half that price, or growing their own medicine.**

It's not all about me

More anecdotes are included here, to highlight some of the situations people are in, due to the high price and lack of simplified access to cannabis as medication. These refer to a handful of people I know personally, and whose stories I know I am welcome to share in such a situation as this. Their anonymity is maintained herein out of respect for privacy. They are non-the-less, real accounts, of real people, representative of the many thousands of individuals in similar situations, right around the country.

[A]. As a result of an horrific accident decades ago, [A] had been on opioids which robbed him of the ability to "do stuff" for years. He stopped prescription opioids in favour of smoking cannabis, which provided significant but incomplete relief. More recently he began using privately produced cannabis oil, to great effect. For the first time in decades, he has been able to sleep through most nights, instead of the paltry one or two hours of sleep per night he would previously get. He can now function again. He can be a dad. He can do things again. **He has not sought the "legal" prescription path, as he cannot afford it.** And he reports driving more confidently now than when he used opioids.

[B]. [B] is a mother and grandmother who has used cannabis for a good portion of her adult life. She has a job which requires a "clean" licence. She uses cannabis for debilitating PTSD. Yet she is in daily fear that her medicinal use of cannabis may be the cause of her losing her licence. Not even her GP is aware of her cannabis use, as she fears prejudice and judgement in this regard. She does not know how her GP feels about medicinal cannabis, but won't bring it up as she does not want it on official records. **She uses black market cannabis because *she needs to*, not because she wants to.**

[C]. [C] has just recently got onto the *prescription* cannabis bus, having used cannabis for chronic pain, and for pleasure too, for most of his adult life. However, he recently had to pay around $300 for 20 grams of prescription flower (bud), which is about twice the cost of black market cannabis. **But he needs cannabis, and the pharmaceutical product is cost prohibitive. So he is likely to use privately sourced material to supplement his prescription. If he could grow it himself he could source his cannabis more or less for free, and not have to lend any support to the black market, something he abhors doing.**

[D]. [D] suffers from severe anxiety, depression, and panic attacks. He has self-medicated with cannabis for decades to keep his symptoms relatively mild. He has been treated in the past with pharmaceutical antidepressant and anti-anxiety medications, but they have produced many unwanted side effects and have not proven as efficacious as cannabis has, for him. He can not work with his serious conditions, yet he can not access the disability pension either. **[D] can not afford prescription cannabis, nor could he afford the $300 or so per year that Authorised Prescribers of cannabis ask** (over and above any medicare rebates) **in consulting fees. So he has to put up with buying black market cannabis, just enough to lower his symptoms to an acceptable level, and this alone costs several hundred dollars per month.**

These are but the tip of an iceberg of immense proportions. Remember, **millions of Australian citizens have consumed cannabis this year**[21], and for many different reasons. Millions. What if we could detect them all, and follow through with prosecution? It might do wonders for the financial coffers of governments, of privatised gaols, but at what cost to our society? Many many cannabis users are, by and all, law-abiding, productive, valued members of our society. What would/does criminalising them achieve?

Did I say "law abiding"? What I should have said was "*sensible law*" abiding.

- **Doctors, and lawyers, and police, and fire-fighters, and nurses, and dentists, and politicians, and bus drivers, and truckies, and bikers, and cyclists, and sportspeople, and media workers, and actors, and musicians, and teachers, and engineers, and cleaners, and produce workers, and farmers, and builders, and shop-owners, and**

21 National Drug Strategy Household Survey 2019 op. cit.

power workers, and tradies, and pensioners, and church goers, choose to use cannabis despite its legal status.

Do you get it yet?

I know at least one in each of the aforementioned groups, in fact many of them in many cohorts, who have been or are, cannabis users. **Productive, decent people going about daily life and work and play who share in the being of cannabis users.** And we could, if we had the will, and the gaolers, and the police, penalise each and every one of them for making this personal choice. But who would we have left to do the work to keep the economy afloat?

Speaking of which, here's an interesting developing situation.

- **Some firms are now NOT drug testing their employees, as positive results seem to be weeding out reliable workers.**[22] [23]

I could have told them that. I have shared many a workplace, some of which were highly demanding, high responsibility workplaces, with other cannabis users and my own observation is that in the main, they are good workers, reliable and productive.

Cannabis needs to be more affordable, and easier to access for adults who choose to use it for any reason. Safety concerns have largely been addressed already in this paper, and also in many others, and in some many thousands of years of continued use of this herb without it killing people all over the place. Unlike alcohol, for example. Yet here we are.

Medicinal cannabis solutions

Whilst the current prescription cannabis system is being developed, it has become clear to me that we need a two-fold solution to medicinal access to cannabis.

1. We need cannabis prescriptions and prescription cannabis to be easier to secure, and much more affordable. The cost of prescription cannabis needs to be subsidised for those who have considerable financial constraints.

2. We need to allow those who wish to, to grow the herb in their homes without fear of either persecution or prosecution. Whilst the NEED is for this to be available to "medicinal" users, it makes much more sense to simply legalise cannabis for personal use and possession for adults in Australia.

"Why?" I hear you ask. "Why do you keep insisting upon legalising the devil's lettuce? We're talking about *medicinal weed* here aren't we?" I'm glad you asked because:

- **Regardless of the medicinal aspects to cannabis, people will use it for recreation and socially too, and we currently have MILLIONS of Australians breaking the law. And it is this unpopular, outdated, draconian law, that most hinders our progress with medicinal cannabis.**

22 Megan McClusky (2021) Amid a Labor Shortage, Companies Are Eliminating Drug Tests. It's a Trend That Could Create More Equitable Workplaces. *TIME* https://time.com/6103798/workplace-drug-testing/ (last accessed 2022/01/01)

23 Gavin Butler (2021) Companies are Getting Rid of Drug Tests Because They Can't Find Enough Workers *VICE* https://www.vice.com/en/article/y3d7kx/companies-employers-drug-tests-labour-shortage (last accessed 2022/.01/01)

Prohibition has failed us, miserably, and with the clarity of hindsight it will likely be viewed as one of the biggest embarrassments of our age in years to come. **There will always be those within our communities who seek pharmaceutical support for their ailments.** Not everyone has the desire, or knowledge, or contacts, to grow their own fruit, or vegetables, or chooks, or to brew their own beer, or to make their own wine. So they buy them from (mostly) reputable, reliable sources. The same is already the case for cannabis in jurisdictions where cannabis is legal, and trade is encouraged. Yet here in the lucky country we languish in fear of last century's boogie-man. How stupid are we?

Don't worry be happy now

There will be enough money to be made by legitimate pharmaceutical companies and their offshoots, and from shops and the like, servicing those who don't choose the private route, and our Governments will rake in the taxes. Cannabis would NOT have to be highly taxed. The GST would be sufficient once the legitimate cannabis trade booms, and it will, to fill government coffers to dizzying levels. Look at California, or Amsterdam, or anywhere that cannabis trade has been allowed to flourish. Economies boom, and people can go about their lives using their medicine or enjoying their high.

A note on my phrase "enjoying their high." Plonkers constantly look forward to their bottle of red after dinner, their slab of tinnies on the weekend, essentially looking forward to how alcohol makes them feel.

Mention the "high" associated with cannabis, and people gasp and whisper, glance sideways, or turn crimson red. This needs to stop. Victorian Premier Dan Andrews (like him or loathe him) can encourage Victorians to "get on the beers" - you know for their mental health, after a long covid-19 lockdown - and that's ok. But pot smokers like to "get high" (aka feel good) and that's a problem? As the teens - many more savvy than the adults around them give them credit for - would say, "Puh-leeeease!"

Speaking of teenagers, and younger, loads of kids 'get it'. They're savvy. They've witnessed and been impacted by many facets of this very discussion. They've seen the harm of substances misuse, overuse, poorly managed use, including but certainly not limited to alcohol. They've also seen and felt the love, and had good times with elders in their lives who use cannabis and many other drugs besides, for a multitude of reasons. And they roll their eyes whenever most adults bring up the conversation. Because so many of us, just don't get it.

Back to medicine, **one of the effects of my own use of cannabis for pain relief, is that when under its influence, I feel good**. The mild "high" in my case is not a worrisome, impairing, unwanted side effect, but rather is part of the reason that cannabis works for my pain. I enjoy feeling good. I enjoy feeling good enough that I can get up, and get mobile, and do stuff without wincing at every move. Should that be a crime? Should anyone actually look down their nose at me for wanting to be well? Not for much longer in this country, I hope.

Normalise cannabis

Having said all that, many Australians ***do*** have the freedom and enjoyment of growing their own food, and wine, and beer, and it is inevitable that once the stigma is removed from cannabis and it is "normalised" in our society (once again), there will be a multitude of people moving toward self-supply of this interesting, helpful herb. There is no sainly robust argument to stand in their way.

- **Make cannabis "normal" again, for medicine, for everyone.**

Committee Terms of Reference (2) (c) the potential benefits and risks of permitting industrial hemp for human consumption

Until recently, my thoughts on "industrial" hemp *for human consumption*, were based on the knowledge that I can and do buy hemp seed, from my local supermarket, or online, for my personal health and well-being. I like to eat hemp seed, I know it to be safe to consume in moderate quantities, and that there is no risk of my being psychoactively affected from same.

I am less familiar however, with some of the recent 'internet chatter' regarding the possibility of using "whole plant" parts - roots, leaves, etc., - in novel foodstuffs. To me it's not rocket science, nor something to be all torn up over.

- **We have established in this country that industrial hemp *seed* used as a foodstuff contains so little THC as to be considered non-psychoactive and safe to consume as a food or food additive.**

We need to expand the current myopic view to include other parts of the plant, keeping in mind the regulations and safety, and that we don't want our kids to get inadvertently baked from a trip to the bakery. Regulate, monitor, adjust accordingly.

So what's the problem? We set levels of all sorts of additives and food constituents of concern in a public health context. THC - due to potential psychoactive effect - should quite rightly be limited or regulated within the general food supply.

Not hallucinating

Having said that, I see room for the emergence of a *cannabis*-in-food (the psychoactive stuff) space in commerce, in the sense of other legal yet restricted adult indulgences like alcohol, once our society is freed from the shackles of the "ghost Mary-Jane"[24] I see a future with industrial, low-THC hemp products, not just seeds but roots and more, in the health-supplement, foods, skin-care space, and cannabis as a therapeutic/medicinal/recreational consumer product with certified outlets, and with the rights and responsibilities of being able to grow same in your back yard, like we can with grapes for wine, or aloe vera for sunburn.

It is worth mentioning that putting psychoactive substances in foodstuffs is nothing new. Think cocaine in Coke™ (hence it's full name). Think chocolate, a comfort food *because it makes us feel good*. My point is that when it comes to what we eat, caution is advised, along with informed consent.

It may help from a policy perspective, to understand better the forward momentum industrial hemp is under at present. Why is this pertinent to this section of the discussion? Because **roots and leaves, at this stage are waste products** from the production of hemp fibre, which may make a suitable foodstuff stock as hemp seed currently does, but which we are simply not

24 Smith, DB (2022) My own quip - Mary-Jane being another term for Marijuana - I have avoided using the "M" word so far in the main text of this document, and the "ghost of Mary-Jane" describes in that context, the hangover left from the Reefer Madness campaign referenced earlier in this paper., and why I refer to it as cannabis or hemp. Use of the "M" word is both unscientific and unhelpful, and it has racist undertones in some contexts.

allowed to use in that way due to the concerns with THC in this space. And the industrial hemp space is set to move at a rapid pace, which leads me to the following.

Committee Terms of Reference (2) The Select Committee is to inquire into and report on the potential to amend the current legislation and regulations which apply to cannabis and hemp in Western Australia with particular reference to — [(a), (b), and (c)]

Tying it all together

In addressing each of the individual sub-clauses in the TOR, there are considerable areas as mentioned in my preamble, wherein those TOR overlap significantly.

A discussion involving each of the three sub-sections is not complete without considering the broader pictures of cannabis, hemp, and the advantages of encouraging anything which furthers safe developments within this space.

- **It all boils down to the law.**

It is my contention that the prohibition of cannabis is an impediment to the advancement of just about everything. There's a big picture here, and once we see it, we can't unsee it. So we'd better fix it.

Introducing industrial hemp, waste not want not

- **Industrial hemp has been as much a victim of prohibition as "the other cannabis" has, and it is still hampered by the way we, as a society, view cannabis.**

Whilst I have called cannabis "hemp" and or "cannabis" interchangeably for decades and often still do in conversation, I recognise the need to differentiate between industrial and non-industrial uses of cannabis, so I'll try to stick to emerging convention hereon (for the most part) and refer to the industrial variety as hemp, and to the other stuff, cannabis.

You see, hemp ***is*** cannabis. **It is selected and grown differently than medicinal or recreational cannabis, to give it a much higher fibre yield and negligible THC,** but it is none-the-less cannabis, and its use has suffered much from prohibition. And following, is a basic principle of chemistry the import of which will become evident as I continue.

- **Whatever we can make from a hydrocarbon, we can also make from a carbohydrate.**

Let that (carbon) sink in.

There is much information available regarding the emergence of industrial hemp, or more accurately the re-emergence of a hemp industry, and we'd be a pretty foolish society if we did not allow and encourage the many benefits to be had from growing and using hemp.

Think just for a moment about everything we make from hydrocarbons. You know, from ***fossil fuels***. Not only the fuel for our cars, or the oil and diesel and kerosene fuelling our trucks, our aircraft, our generators, and our boilers, but also all of the products which are an

offshoot from the oil industry. Think of all of the plastic in your daily life. It has virtually all been made from oil, or oil byproducts.

Now think of carbohydrates. Plants. We COULD grow it all. Yep, we could grow it all. Almost every farmer, every property with reasonable soil, could grow a crop of hemp almost anywhere and almost everywhere in this country. It doesn't ALL need to be top quality. Of course, we would need to re-tool significantly in some arenas for this to be borne out.

- **We have the smarts to do this, all we need is the political will.**

Take a look around yourself. Plastic in the fridge, in your computer, your phone, your lighter, your biro, your toothbrush, your car interior, heck even your car body ***could*** be made primarily from hemp[25]. We have here, the potential to take back control of our economy, and of local economies, and a chance to de-centralise.

- **Hemp due to its nature, would be best transported to local processing factories, providing local employment.[26]**

- **The stalks would be broken down into hemp bast fibre, and hemp hurds.**

- **Hemp hurds can be mixed with lime to make hempcrete[27] [28], a sustainable carbon-sequestering building material we should be using for housing construction, and particularly our governments should be insisting on it for public housing and other public buildings. A lightweight, extremely fire resistant, mould resistant, pest resistant building product which would substantially reduce the risk of losing everything in a bushfire, yet we still languish over our bloody "drug" laws.**

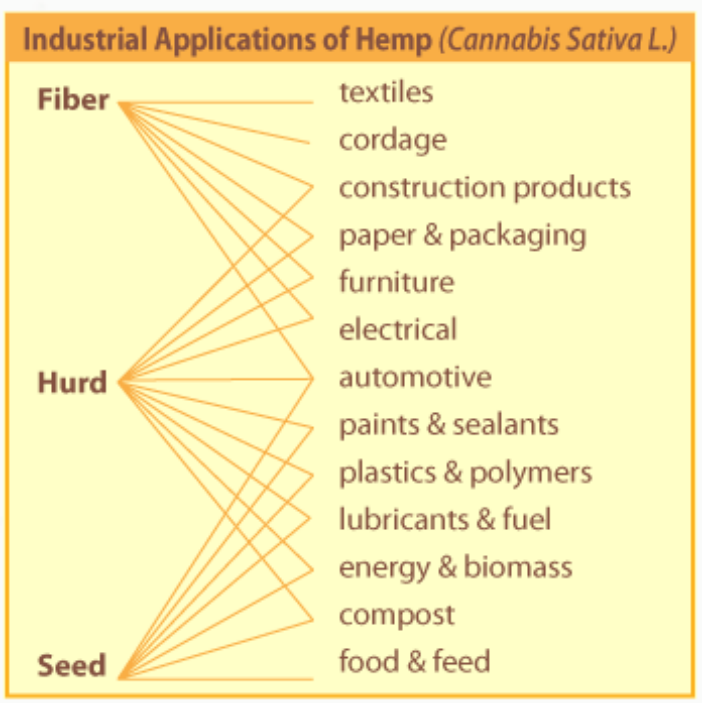
But don't take my word for it. Shining examples of the current and potential uses for the hemp plant can be found all over the internet. And this is not just the purview of dreadlocked hippies (not that there's anything wrong with them) in the back shed of grannie's house, trying to persuade non-believers.

25 Industrial Hemp Western Australia Association Inc. (no date) *Hemp – cars and components* https://ihempwa.org/cars/ (last accessed 2021/12/28)

26 PIRSA Fact Sheet - *Growing Hemp in South Australia.* "NOTE: At the time of publication there is no fibre processing infrastructure in South Australia. Fibre production will remain uneconomic until such time as suitable facilities are available within a short distance from production areas. Hemp straw is very lightweight, and transporting unprocessed straw over any significant distance is extremely costly." https://www.pir.sa.gov.au/__data/assets/pdf_file/0020/343442/Fact_Sheet_-_Industrial_hemp.pdf (last accessed 2022/01/03)

27 Laurissa Smith (2019) *Hempcrete - the eco-friendly material breathing new life into Australian homes,* ABC Rural https://www.abc.net.au/news/rural/2019-12-08/carbon-neutral-hempcrete-homes-building-in-popularity/11769446 (last accessed 2022/01/03)

28 See also *Hempcrete Australia* https://www.hempcrete.com.au/



Industrial Applications of Hemp (Cannabis Sativa L.)[29]

But wait, there's more

This brings me back to the need to understand not only the current uses for hemp but also the potential uses. If you're discarding leaf and root material as mentioned earlier, or any other plant parts for that matter, the waste, matters. **It could be feeding people. Think novel foods. Think pretend meat.**

- **There's the added bonus that hemp is outstanding in environmental fields** (hilarious pun not intended) **and encouraging development of a hemp industry will help restore some balance to our environment, our planet, and help feed us as an added bonus!**

Carbon farming and atmospheric CO2 reduction targets

A-whole-nother paper could be written on carbon sequestration alone. But briefly, just think on this:

> **Industrial hemp has been scientifically proven to absorb more CO2 per hectare than any forest or commercial crop and is therefore the ideal carbon sink.** In addition, the CO2 is permanently bonded within the fiber that is used for anything from textiles, to paper and as a building material. It is currently being used by BMW in Germany to replace plastics in car construction. It is therefore additional to what would otherwise be grown or sourced from oil. It can be constantly replanted and as such meets permanence criteria as defined by the Kyoto Protocol. [My emphasis – DS]
>
> **The cultivation of industrial hemp in Australia is vital in our battle to reduce pollution, conserve precious water resources and to improve soil quality.** [My emphasis – DS]

29 GoodEarth Resources (no date) The Role of Industrial Hemp in Carbon Farming https://www.aph.gov.au/DocumentStore.ashx?id=ae6e9b56-1d34-4ed3-9851-2b3bf0b6eb4f#:~:text=Industrial%20hemp%20has%20been%20scientifically,and%20as%20a%20building%20material. (last accessed 2022/01/03)

> **Industrial hemp is unmatched as a means of sequestering Carbon Dioxide and binding it permanently in the materials it is manufactured into.** The accreditation of industrial hemp as a generator of carbon credits will make its cultivation more attractive. [My emphasis – DS]
>
> In addition, the fiber is robust and has a large variety of uses as paper, textile and as a biofuel. The seeds are a valuable source of protein for humans and for use in animal feed. **This will stimulate a whole new industry and reduce reliance on imported goods.** [My emphasis – DS]
>
> **The widespread cultivation of industrial hemp in Australia will give a much needed economic and sustainable boost to remote country areas and areas suffering high unemployment and hardship**.[30] [My emphasis – DS]

With all of the posturing in our federal parliamentary circles regarding coal, no-one is really pushing the hemp cart, and we should be. Almost thirty years ago when I worked in power generation, in a coal-fired power station no less, I frequently pondered the amount of carbon going "up the stack" as CO2. I pondered that we could essentially re-tool, stop burning coal, and start burning hemp.

That never happened. It should have. Because though we'd have still been sending CO2 up the stack, we would also have been extracting it from the atmosphere by growing the hemp we burned, whilst we conceived better energy solutions. It was my early introduction into thinking carbon-neutral. My thinking at the time was not about climate change - that was barely on anyone's radar - but simply about less air pollution. I lived near to where I worked, and we had huge unsightly black holes in the ground, and visible pollution in the air from burning the coal we dug up.

Three decades later, and we are so far behind where we could have been at, had our politicians and community and business leaders the will to make change.

A battery of potential energy solutions (the puns are creating themselves now)

Perhaps the one of the hottest topics in tech and political circles at the moment, is energy. Opinions and pontifications abound about coal, wind, solar, hydro, hydrogen, the list seems endless. Slowly but surely however, we are coming to the realisation that sustainable, cleaner energy requires not only innovative generation, capture, and production techniques, but also that huge advances in storage of energy are required. Lithium-ion was, until recently, the new kid on the block. Enter hemp.

> Researchers are using so called waste fibres and fines from the decortication of the [hemp] stem to create lower-cost energy storage.
>
> Alternet Systems, a company dedicated to energy storage and EV tech, has purchased land in New York to grow and process hemp as a component in supercapacitors, a form of energy storage that can be charged much faster than lithium-ion or any other type of battery.

30 James Vosper (no date) The Role of Industrial Hemp in Carbon Farming, *GoodEarth Resources Pty Ltd* *h*ttps://www.aph.gov.au/DocumentStore.ashx?id=ae6e9b56-1d34-4ed3-9851-2b3bf0b6eb4f (last accessed 2021/12/30)

> Using hemp for energy storage
>
> … [Professor] Mitlin's research uses hemp bast, the bark of the hemp plant and a waste product during hemp production, as a replacement for geographer, a much more expensive material, in supercapacitors.
>
> Because of its strength and light weight, manufacturers use graphene, a material composed of an atom-thick layer of carbon, to create nanosheets for capacitor electrodes.
>
> However, it's quite expensive. The hemp bast Mitlin uses is much cheaper than graphene and, on top of that, Mitlin says their hemp supercapacitors have been able to store 12 watt-hours of energy per kilogram – over 2x as high as conventional supercapacitors.[31]

Now hemp won't likely *replace* Li-ion batteries any time soon, but as a supercapacitor (rapid charge, rapid discharge device) it may well be used to enhance the serviceability of Lithium-ion and other energy storage systems. It has great potential for regenerative braking systems, such as might be employed in electric cars, busses, fast trains, and the like.

Hemp seed, food for thought

Whilst whole plant hemp is suitable as a stockfeed, hemp seed is, for humans, one of nature's superfoods. I don't mean in the "fad" style of smashed avocado, or kale (not that there's anything wrong with them *cough*), but it is actually one of the most nutritionally balanced sources of omega 3 (brain food) and omega 6 and in fact *all* of the essential fatty acids our bodies cannot produce, the "good fats," that one can find. It is a meat-free source of protein, with little carbohydrate. I'm no great fan of pretend meat, but for those who go vegetarian or vegan, the benefits are obvious.

Take a look at the nutritional bounty available to us from the humble hemp seed. This is not new. Most of it I have been aware since some time last century:

- Hemp seeds contain the highest amount of PUFAs (Polyunsaturated Fatty Acids) like Omega 3 and 6 - level with Walnuts for the #1 position at around 47g of PUFAs in every 100g of seeds.
- The highest quality and quantity of Protein. Hemp protein is gluten-free with a complete Amino Acid profile and Hemp is the only plant to make protein from Edestin making it more digestible than other forms of protein like Soy. And unlike Soy doesn't cause allergies or contain estrogen compounds. Every 100g of Hemp Seeds contain approximately 33g of this high quality protein.
- GLA (Gamma Linolenic Acid) - one of only five known sources (Borage seed, Evening Primrose seed, Black Currant seed, Carrot seed, Wheatgerm) of this 'wonder' oil believed to be important for preventing inflammation.
- 15 times as much fat-fighting CLA (Conjugated Linoleic Acid) as fish oil.

31 Industrial Hemp Western Australia Association Inc. (iHempWA) (no date) *Hemp - batteries* https://ihempwa.org/batteries/ (last accessed 2021/12/28)

- Practically no Carbohydrates with less than half a gram of sugar per 20g serving.
- Gut-cleansing Fibre.
- Cholesterol-fighting Phytosterols - 1480mg per 20g serving.
- Minerals including Calcium, Magnesium, Iron and Zinc.
- Vitamin E plus other Antioxidants.
- B Vitamins including Folate.
- Vitamin D3 - the only known plant food source of this bone-building "sunshine" vitamin.[32]

So what is holding us back? Misinformation, ignorance, prejudice, stigma, all tied in with **the legal status of cannabis hemp, and our community attitudes toward same**.

The cost of stagnation, of not involving hemp in our everyday lives, is enormous. Even just a quick look over the list of potential markets for industrial hemp products tells you that IF we had the impetus to re-tool, the benefits to our agriculture, our environment, our domestic economy, our health, our trades, our bushfire preparedness, our health and general well-being, and that of the country we stand upon, not only could, but also ***would***, be immense.

- **The legal status of cannabis has for far too long allowed a prejudice to fester within our society which has assisted in the 'demonisation' of one of the most useful substances on the planet.**

We must change this. We would be stupid, nay irresponsible, if we did not assist in every way we can in furthering the industrial applications of hemp, and freeing it from the legal and community attitude constraints will go a long way toward hastening that process.

Law, a brief word from a brief

- **While cannabis remains illegal, *the law is an ass***

I don't here wish to drag readers through law school, but simply to share what I consider a more grass-roots or layman's look at law. NOT cannabis law *per se*, **but rather what in general makes a good law, and what doesn't**. Most of us are, by and large, out of our depth when it comes to legal battles, but we generally do know right from wrong. So here's a little something from the Law Society of WA, used in **teaching** Year 11 students about law. Law theory delivered at a level most of us, "the great unwashed", can readily understand.

Unit 1 – Political and legal decision making
Political and legal systems *[right up the alley of this committee - DS]*

- characteristics of an effective law

For a law to be effective it must be
1. Known to the public
2. Acceptable in the community
3. Able to be enforced
4. Stable
5. Able to be changed
6. Applied consistently

32 Nutrition, *Hemp Foods Australia,* https://www.hempfoods.com.au/page/nutrition/

> 7. Able to resolve disputes[33]

I'll expand a little on several of these characteristics, numbers two and three. And six, a little further on.

> **Acceptable in the community**
>
> In a democracy laws should reflect community values. Thus, for a law to be effective, it must be acceptable to the community otherwise members of the community may be inclined to disobey the law rather than go against their own values.
>
> **Able to be enforced**
>
> Although some laws may be seen to be a good idea, if they cannot be enforced, then they would be inoperable. An effective law must be able to be enforced. Law enforcers must be able to catch those who break the law and bring them to justice.[34]

At the risk of repeating myself, MILLIONS of Australians break our cannabis laws every year, and no-doubt many of those do so every day, or every week, or every month, or every party. **Almost half of all Australians aged 14 years or over have used an illicit substance in their lifetime[35].**

These are not small potatoes! Almost half of us have used an illicit substance! Whilst this paper is of necessity cannabis centred, these statistics speak volumes about the level of disrespect within our community, for prohibition.

Our current drug laws consistently fail in both of the criteria described above. Many citizens do not respect prohibition, and clearly not everyone who breaks prohibition laws is being "caught" and "brought to justice". **So law enforcement and the justice system are left to gather up the low-hanging fruit within our society, and then proudly boast about how well they've done catching crooks, on the Six O'clock News.** Whilst the black marketeers, the organised gangs, those who run the show, rub their hands together; **"there's plenty more stooges where they came from."**

This leads me to the third point, because it is clear from anyone living in our communities who has a pulse, that the law is too frequently ill-applied, which in itself renders it ineffective. A law, to be effective, must be:

> Applied consistently
>
> Consistency is a key factor in whether a law is effective. If laws are applied differently to different individuals, it would not be just and the law would be unfair. This would make the law ineffective as the community would not

33 FBLEP (2015) Characteristics of an Effective Law Teacher and Student Resource. *The Law Society of Western Australia* https://www.lawsocietywa.asn.au/wp-content/uploads/2015/09/2015-FBLEP-Characteristics-of-an-Effective-Law.pdf (last accessed 2021/12/29)

34 Ibid.

35 National Drug Strategy Household Survey 2019 "In 2019, 43% of Australians aged 14 and over had illicitly used a drug at some point in their life (including pharmaceuticals used for non-medical purposes) and 16.4% had used one in the last 12 months." https://www.aihw.gov.au/reports/illicit-use-of-drugs/national-drug-strategy-household-survey-2019/contents/summary (last accessed 2021/12/28)

be able to rely upon the law being applied appropriately and function as intended.

The high rate of incarceration of Aboriginal Youth is an ongoing issue in Western Australia where in 2013 Aboriginal juveniles were detained at 60 times the rate of non-Aboriginal juveniles.1 Though there are many contributing factors as to the causes including socioeconomic and educational issues, **inconsistency of the application of laws has also been identified**. Mr Peter Collins from the Aboriginal Legal Services of WA made a submission to the Senate inquiry on justice reinvestment in 2013. In his submission, he made the following statement: [my bold - DS]

> *"It starts at a very fundamental, grassroots level. It starts with the way Aboriginal people are policed in this state—how they become enmeshed in the justice system. I have been the director of legal services since 2005. In that nine-year period we have acted on behalf of Aboriginal children in particular who have been prosecuted for the most ridiculously trivial offences imaginable. It is hard not to think it would not have happened if they were nonAboriginal, if they came from the leafy western suburbs of Perth, if their parents were professional people with all that goes with that."*

Such inconsistency in enforcement of the laws can lead to negative behaviour and rejection of the law as there is no trust in the law.[36] [my bold - DS]

There are of course myriad other instances where it is obvious that our "drug laws" are not applied consistently. It brings us back to low-hanging fruit.

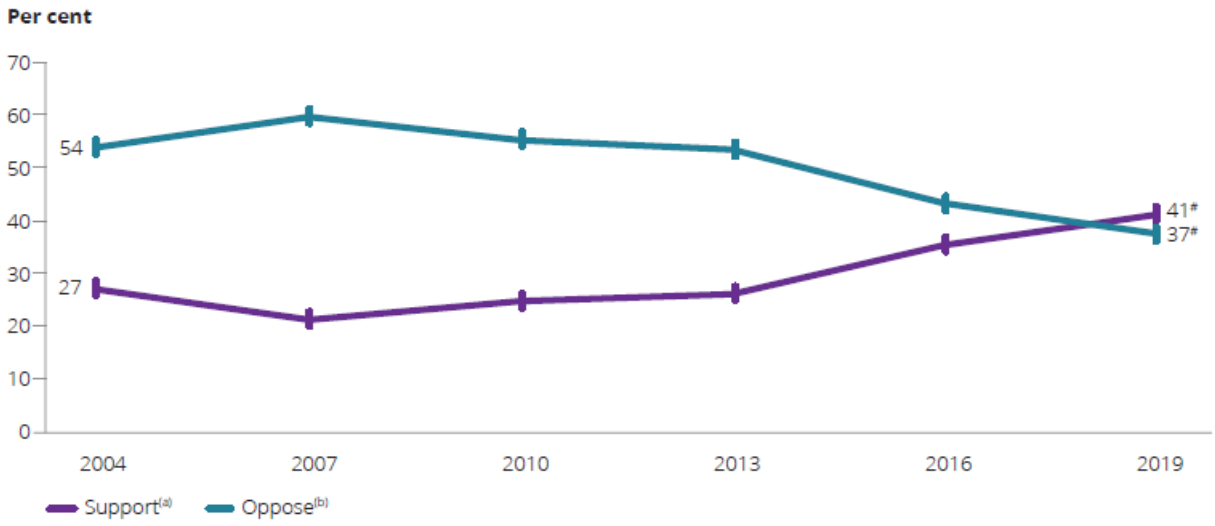
Australians on cannabis legislation

- **We, the people of Australia are now in favour of legalising cannabis.**

In 2019, for the first time, more people said they supported the legalisation of cannabis than opposed it (41% compared with 37%). It was also the first time the proportion of Australians who supported cannabis being used regularly by adults was greater than the proportion that supported regular tobacco smoking (19.6% compared with 15.4%).[37]

Figure 9.2 of the survey shows the levels of support and opposition for the legalisation of cannabis over a fifteen year period from 2004 to 2019 (aged 14 and over):

36 FBLEP (2015) op. cit.
37 National Drug Strategy Household Survey 2019 op. cit.



From the NDSHS 2019 survey[38]

We are clearly at the crossroads. Beyond, in fact.

- **More Australian citizens are in favour of the legalisation of cannabis now, than those opposing it.**

This was not one of those TV news or radio surveys, always skewed in one direction or another. Or a bunch of radical uni students hell-bent on making their parties more fun.

- **The NDSHS survey material is collected and collated BY OUR GOVERNMENT for the exact purpose of guiding policy, which includes the areas of both health and law.**

The law has indeed become "an ass", well beyond its use-by date. We have passed the point in public opinion where politicians, police, and the courts, can maintain control of the populace, in this regard.

Yet we are not rioting. We are cannabis users (we don't do riots), or friends of cannabis users, or parents of cannabis users, or kids of cannabis users, who all demand (by proxy at the very least) that we stop wasting money on prohibition and penalising people for using cannabis.

The high cost of our drug laws

Any treatise on the cost of drug-law enforcement is beyond the scope of this paper, and figures are plucked out and thrown around willy-nilly already by enough folk and agencies, and I have no desire at present, nor the time, nor the pay-scale, to sort the wheat from the chaff in that respect, so I'll leave it up to economic experts.

Having said that, you don't need to be Albert Einstein to know that drug-law enforcement runs into the low billions, even more so if we consider cost of the many crimes that are a direct result of our current stance on drugs, and the immense harm such stance has created.

And who really knows what NOT utilising cannabis for its many functions, has cost us.

Free cannabis

Should you follow through this document without prejudice, with your mind open to re-arranging your thinking in line with newfound knowledge, facts presented with relevance, and

38 Ibid. p79

information which many were likely not aware of previous, you should not help but come away set on helping our society move forward from the quagmire we appear bogged down in, *the legal restraints on cannabis.*

Back in the early 1990s I read a book which changed my life. Well I read several, but the standout among those which inspired my drive for drug law reform research back then, was Chris Conrad's *Hemp Lifeline to the Future - The Unexpected Answer for Our Environmental and Economic Recovery*. It was so well researched and footnoted that I was able to check up on much of what was claimed. Those claims panned out in the main. It inspired me to search government studies and scientific publications and I was left nothing short of amazed by what I discovered.

Nothing has changed much since then. Cannabis is still illegal in this country, except under the strictest of regulations and red tape. However, research and development since has shown us that the claims made in Conrad's book DO stack up, and that hemp really could lead us out of the modern dark ages. I'll leave readers with a few words from the introduction of that book[39]. Remember this was almost thirty years ago:

> **Self-Destruction Is Not The Price of Progress**
>
> Life begets hope. Understanding life is key to survival. Today, however, we see our economic and biological support systems crumbling beneath us. The industrial revolution led to a level of consumerism unparalleled in human history – a "throw-away" society with a hidden price tag. Did you ever wonder how people used to survive without all the things we take for granted? How did they get by without plastic packaging, fat newspapers, traffic jams, synthetic fibers and pills, bottled water, electricity, photocopiers, television, smog and junk mail?
>
> The natural healing processes of this planet are being tested and, all too often, overrun by the pace of pollution. The cumulative devastation of the environment is accelerating at a calamitous rate. In the words of President Bill Clinton [like him or loathe him], "Economic strength will increasingly depend on sound environmental policy. … If we do not find the vision and leadership to defeat the unprecedented new threats of global climate change, ozone depletion, habitat destruction and desertification, then those threats may well defeat us."

If you choose to ignore this submission and others like it, you choose a bleak future for your children, and for their children. The time to free hemp, to free cannabis, to free Australian citizens from the shackles of cannabis prohibition, is upon us. Let's do this!

My own final thought on this. When I began publicly advocating for change back in the nineties I frequently uttered a phrase which went something like this:

- ***I advocate for drug law reform because I want my kids to get a job before they get a conviction.***

39 Conrad, Chris (1993) Hemp Lifeline to the Future - The Unexpected Answer for Our Environmental Recovery, *Creative Expressions Publications*, Los Angeles, California.

I thank the West Australia Legislative Council Cannabis and Hemp Select Committee for the opportunity to speak up as a citizen, and on behalf of many citizens, and for giving this submission due consideration.

David B. Smith