Editorial

TO BAN OR NOT TO BAN? - THAT IS THE QUESTION

> Two things fill the mind with ever new and increasing wonder and awe, the more often and more seriously reflection concentrates upon them: the starry heaven above me and the moral law within me.
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> *Critique of Practical Reason, Immanuel Kant 1724-1804*

A regular, almost predictable, occurrence these days is that, when medical friends meet together and with others, over a drink or at a dinner party, the convivial conversation will be steered at some stage to a discussion on drugs: quite often a polarised, and many a time, heated, debate - perhaps fuelled to some extent by some palatable form of a preferably vintage solution of ethanol, if not a good cigar - will ensue as to whether or not 'soft' drugs, such as cannabis, should either be legalised or at least decriminalised. These deliberations are not new, and indeed this subject has been mooted for over half a century. In this joust, the 'thin end of the wedge' corner will spar with the 'anyway it happens *de facto* if not *de jure*, so why the hypocrisy?!' opposite corner, and in many such bouts fought on many a dining room or pub table, no clear winner can be declared nor are any towels thrown into the ring.

Cannabis has been eulogised as the drug which 'is by far the most dangerous of all the illicit drugs in its effects upon the authorities'.[1] Indeed such politically motivated considerations are often in the backdrop and colour the arguments that are being put forward. What is perhaps even more pertinent, and should be more disturbing, is the acknowledgement by those in the know that the use of cannabis is on the increase and that 'problem drug users are getting younger', and what was once a problem with school leavers and adolescents is now a matter that has to be addressed, discussed and taught about during the period of secondary school education of both boys and girls.

The drug cannabis has a lengthy history, and was possibly known to herbalists and shamans in the four corners of the earth, from the very dawn of civilisation as the potent 'weed' (*Cannabis sativa*) which grows wild as an annual, with lush heights of up to five meters, in most tropical climes, where the appropriate ambient temperature and humidity are achievable. Interestingly, the drug belongs to the same family as the genus *Humulus*, the hop that is used to flavour beer - bitter or heavy. The Chinese Emperor Shen Nung in 2727-37 BC documented its medicinal uses in his *Herbal*. In Indian legend, the Lord Shiva enraged after a family squabble, retreated to the cool shade of a cannabis tree and while sheltering there ate some of its leaves resulting in his title as 'Lord of *Bhang*'; in the atharvaveda (science of charms) 'bhang' is referred to as one of the 'five kingdoms of herbs, which release us from anxiety'.[2]

The word 'cannabis' is said to be derived from the Assyrian *quannabu* (noise) because hemp seeds were used together with incense in the temples with the desired result that both the priests and congregation inhaled the fumes and demonstrated their appreciation by vocalising their feelings of elation loudly and publicly; no wonder that in battle, 'The Assyrians came down like the wolf on the fold, with their cohorts gleaming of purple and gold....' In the Bible, the first Book of Samuel and the Song of Solomon may have references to its use. Greeks e.g. Dioscorides, and Romans e.g. Galen were familiar with its use;[3] indeed, in debris from the oarsmen's deck, seeds identified as those of cannabis were discovered recently in a shipwrecked trireme.

Although the use of cannabis in this context could have been for its euphorient effects, its presence may have been alternatively associated with the use of hemp, also a by-product of the same plant, first used by the Romans to manufacture ropes and canvas. Moorish alchemists and pharmacists, mediaeval physicians during and after the Crusades, and the monastic dispensaries could not but have been familiar with it; the troubadours would not have failed to sing of the infamous exploits of the 'haschishin' (*sic* assassins), professional murderers 'high' on the drug (hashish) were well known about. The use of cannabis was so prevalent that, in 1378, the Arabian Emir, Soundouni Schekouni outlawed its use, and anyone found cultivating or using the plant had his teeth painfully extracted as a punishment. Recurrent military incursions by Europeans into North Africa and the Middle East and viceversa, not least during the heyday of the Ottoman empire and the Napoleonic campaigns, the wave of colonisation by many of Europe's nations, and the African slave 'trade' ensured that the widespread and prevalent cultural usage of this drug in Asia and Africa was translated to most European cities and later to the United States. From that side of the Atlantic, the emergence and far-reaching out of youth-liberating 'flower power' culture of the sixties, ensured the initiation of the rest of the world to the mind-bending and peace-imparting powers of 'hash'.

The worldwide wholesale proliferation of the use of this drug - and it should be recalled that cultivation, possession, trafficking and use, are in most countries illegal activities - led to the World Health Organisation (WHO) commissioning a report on it; this first report appeared in 1983, a redoubtable 843-page volume[4] On that occasion, it was published jointly with the Ontario Association Research Foundation. Political pressure and sensitivity once more spurred WHO into activity and the organisation brought together several experts at a meeting in Geneva some years later: literature reviews were commissioned, and a draft report was written and carefully considered in May 1995. It finally saw the light of day as a slim 50-page volume in 1998. This delay was variously attributed to behind-the-scenes political intrigue to suppress some of its observations, particularly canvassed from North America, which has tried so very hard to ban the use of the drug since the era of Prohibition in the 1920s. This shorter 1998-WHO report[5] reflects more on the international scene and the political context of the use of this drug, rather than commenting and reflecting on the scientific and technical advances made about cannabis, since the publication of its more scientifically-achieved: the pharmacology, pharmaco-kinetics and basic mechanisms of action of this drug, and the relationship of the latter to the molecular configuration of the drug were elucidated; a specific receptor, by which the active agents derived from the products of this plant - and there are sixty odd of them - attach themselves to brain cells, and other body sites, was discovered, and used for mapping of cannabis binding-sites, both in the brain and elsewhere. In 1994, a publication by the Australian government reviewed thoroughly the available publications on the drug and reminded the medical profession and others, in a very authoritative way, 'of the risks we currently tolerate with our favourite psycho-active drugs'.[6,7]

Therefore is indeed cannabis *per se* dangerous as a drug? There can be but few quibbles about this, and no dubiety should exist that use of cannabis does acutely impair cognitive development and psychomotor performance, with obvious risks when the person under its influence undertakes such complicated and intrinsically need-to-be-carefully-co-ordinated-and-vigilant activities, such as vehicular driving, aircraft flying and the operation of machinery. Short-term memory and retrieval of information from memory are also impaired. Doses as low as 10 micrograms of delta-9-

tetrahydrocannabinol (THC) per kilogram of body weight are sufficient to produce a 'high'; marihuana smoke contains 0.3 to < 3.0% of this active compound. In subjects whose plasma THC concentrations exceed 25 to 30 ng/ml., 94% failed standard sobriety tests 90 minutes after smoking the drug, and 60% again when tested 150 minutes later.[3,6] Aircraft pilots showed significant impairment of flying skills even 24 hours after exposure to the drug. In the latter study what was perhaps even more worrying was the observation that they were themselves unaware of these deficiencies.[8] In this respect it should be remembered that the elimination high-life of this drug is prolonged for several days due to binding with lipids and there can be additive, and sometimes synergistic, intoxicant effects with the contemporaneous ingestion of even small volumes of alcohol. Chronic use of cannabis may lead to selective permanent impairment of cognitive functioning and a dependence syndrome, and in those with pre-existing personality disorders or schizophrenia, there may often be exacerbations of symptoms.[9] Chronic heavy use will also lead to the effects of smoke inhalation into the lungs with the appearance of tell-tale intra-alveolar macrophages containing brown pigment with acute heavy exposure. Systemic damage to the immune system can also occur; this effect is apparently transient and lost when there is abstention from the drug, but is particularly important in those immuno-compromised in other ways. Both animal studies and anecdotal human evidence, strongly suggest teratogenic effects for cannabis if it is taken during pregnancy, also a higher-than-normal rate of miscarriage, growth retardation in the fetus, complications of labour, low birth weight babies and early peri-neonatal deaths.[3,6]

The United States, which still champions very strict prohibitionist and prescriptive attitudes, has therefore introduced drug-testing in occupations connected with aviation, mass transit, rail, trucking and pipelines; these were introduced by an Executive Order in 1986. Numerous studies have noted that a significant proportion of drivers with positive drug tests in collisions, driver fatalities, reckless driving and impaired driving. The proportions of drivers in traffic collisions testing positive for canabinoids have been found to range between 2.7% and 13.9%.[10,11] This evidence, albeit anecdotal and largely uncontrolled, strongly suggests that drivers should not use cannabis. Similarly in the workplace about 85% of large US firms have drug testing programs of their employees.[12-15] Some reductions in on-the-job accidents were found subsequent to the introduction of drug testing. Similar testing programs have been suggested in recent years and variously implemented for the Armed Forces and the Police in Britain.

When tested in recent years, European public opinion has supported a more 'liberal' line towards cannabis; as the *mores* of society are changing, as they have already altered radically and fundamentally in other sectors of 'morality' as for instance in relation to the acceptability of changed sexual 'customs', should we not now collectively think again about cannabis use? What is the impact of the potential adverse effects of cannabis from the public health point of view, and how serious are these, if cannabis were to be suddenly decriminalised? Its availability could be linked to a strict governmental health hazard warning and it could also be strictly banned to youngsters, during pregnancy and in the work-place? It could ten be made available, just as tobacco and alcohol are, quite legally and above board, in all other situations? This could perhaps waylay and render largely superfluous the illicit trade, worth billions of dollars annually, and the associated smuggling operations, and the requirement of the manpower in maintaining policing and enforcement in one fair swoop?

The Netherlands drugs' policy best epitomises such a pragmatic harm-reduction approach to this problem, aimed at cost-effectiveness of resource use, and an emphasis

of normalisation of such drug use;[16] since 1976 a *de facto* decriminalisation of cannabis for personal use and small-scale dealing was put into operation to separate illicit drug markets from the provision of cannabis. Australia has now also moved close to this position.[17-18] Is the time perhaps not ripe, and is there not scope, for a major medico-socio-political? 'To ban or not to ban' cannabis is no longer a theoretical and philosophical question, occasionally posed by disenchanted students, strong-willed prelates, balmy social welfare agencies, politicians in search of easy sound bytes and 'cloud-cuckoo land' social scientists, but it is now more urgently than at any other time, a concrete and burning question, that needs to be addressed urgently, carefully, meticulously, a fact-of-life issue that effects nearly every family and institution and not just a marginalised and off-the-beaten-rack section of the community; the various potential answers to this question should be sought, reviewed and analysed, and finally acted on in one concerted activity, solidly cemented to a broad-based education policy.

> Fetch me this herb: and be thou here again
> Ere the leviathan can swim a league
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> *A Midsummer Night's Dream, Act II Scene III, W. Shakespeare*

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