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A tale of two Es

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This is the strange tale of two drugs each with a name beginning with the letter E. One is a dangerous killer that leads to thousands of deaths every year and the other is ecstasy (MDMA). The big killer is of course alcohol (ethanol) which, for historical reasons, is a legal drug in the UK (though not in many Muslim states). Ecstasy is currently a Class A illegal drug under the Misuse of Drugs Act that has been in the news recently because the leader of the Conservative Party (David Cameron) suggested that as ecstasy was less harmful than other Class A drugs (such as heroin and cocaine) it might be moved to a lower class. Within moments of this public statement Cameron was being castigated by many anti-drugs campaigners and soon the Home Secretary was pronouncing that as ecstasy unpredictably killed several people every year he would not countenance its downgrading. Despite being correct in his logic Cameron was forced to backtrack on his position because of the present highly charged public view that politicians must 'be hard on drugs'.

But on what evidence do the public and politicians make these judgements? I and many others have argued previously that the best way to evaluate the risks and harms of illicit drugs is to compare them against legal drugs such as alcohol and tobacco. So what are the relative harms of these two E drugs? (see Table 1). Ethanol leads to 22 000 premature deaths per year in England (Rannia, 2003). These are from heart, liver and cancer deaths plus accidents and suicide, but a sizeable number – of the order of one a day – die from being poisoned by excessive intake. Alcohol depresses the respiratory system so death occurs from loss of oxygen. It also stimulates vomiting but at the same time blocks the cough reflex, so when vomiting occurs stomach contents enter the lungs leading to acute respiratory failure. Sadly the victims of alcohol poisoning are mostly young people – often under 20 and sometimes as young as 12 – who may never have been told just how dangerous acute alcohol poisoning is. Often the death occurs on the occasion of celebrating a birthday or examination success which makes it even more distressing to the family and friends, especially if they have bought the drinks. The public response to these occurrences reveals a state of public denial that alcohol may be harmful. When someone dies of alcohol poisoning it is commonplace for the police and family to suspect that their drinks were 'spiked' and set off on a mission to find the real culprit toxin. The fact that they rarely find any other drug is usually not reported so the public are left with the assumption that alcohol was not the real killer.

In a similar way the dangers of alcohol on sexual risk are widely underestimated. Many women and increasing numbers of men are raped whilst intoxicated. Often the victim has little memory of the events and assume that their drinks have been spiked with one of the so-called 'date-rape' drugs. In most cases no drug other than alcohol is detected. Why? This is because alcohol itself is a highly effective memory blocking agent. Strangely there is no education on this risk in pubs or other licensed premises even though they routinely display warning posters to women about the need to use licensed taxis or to travel home in groups to avoid the risks of rape. The fear of date-rape drugs is so great that some police forces have attempted to make test kits available to see if drinks have been spiked. It would be much more effective to provide breathalysers so drinkers could know how intoxicated they are and so, hopefully, limit further intake. Bar staff are being encouraged to enforce the practice of not serving customers who appear drunk – perhaps a breath test at the bar would help them as well as provide a health message to the drinker!

These dangers and deaths from alcohol are made more likely by the arrival of new more palatable forms of alcohol such as alcopops. These have been designed specifically because they mask or sweeten the taste of alcohol so removing one of the reasons why young people used to resist drinking. They also blur the distinction between lemonades and alcohol, so making transition to alcohol easier and maybe in some young people even inadvertent?

Alcohol also kills a large number of innocent individuals through the increase in road traffic accidents and interpersonal violence – again figures are not easily available but it will be tens of thousands per year. Many police are hurt trying to restrain intoxicated binge drinkers every Friday and Saturday nights and many non-violent drinkers are assaulted because they are in proximity to others of more violent alcohol–fuelled dispositions. Alcohol also causes dependence and addiction – in about 10% of

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users – which often leads to serious damage to family and work life with huge social and health care costs. It is also a major contributory factor in suicide.

What of the other E? Ecstasy is the colloquial name for MDMA, a derivative of the stimulant amphetamine and the subject of this and the previous volume of the *Journal of Psychopharmacology*. MDMA was developed as a potential antidepressant though was never formally tested for this indication. It has been – and still is in research centres – used as an aid to psychotherapy especially for marital therapy with couples where the increase in empathy it produces can break down barriers that years of hostility have built up (Grinspoon and Bakalar, 1986). It became a popular youth drug in the late 1980s along with the 'rave' culture where the stimulant properties helped people dance all night and the empathy experience proved pleasurable and led to a very much more relaxed and unthreatening event than those when alcohol was the main drug of choice.

However ecstasy is not a completely safe drug and in the early rave scene a few deaths occurred as a result of hyperthermia and dehydration (probably because clubs prevented access to free water). Public health regulations that ensured free water and 'chill-out' rooms plus education reduced this problem although some individuals still died – most notably Leah Betts. It transpired that her death – and those of some others – was as a consequence of taking in excess amounts of water without sweating from dancing so causing water intoxication. In some people ecstasy can stimulate the release of a hormone, arginine vasopressin (avp) that retains body water and it is likely that some people have a genetic predisposition to this effect.

In contrast to alcohol, ecstasy is less toxic in overdose as it does not cause respiratory depression or block the cough reflex and it is not addictive. Although it can lead to damage to the 5-HT nerve terminals in the brain in both rats and monkeys, this is still unproven in humans, though it is a real risk that users should be aware of. Alcohol is well known to lead to serious brain damage from both its chemical effects and the fact that head trauma is such a common consequence of intoxication.

Following the death of Leah Betts her family launched a powerful and moving campaign against ecstasy which may have reduced use to some extent. Why have we not seen similar campaigns against alcohol which kills so many more of our young people? One groups MADD (Mothers Against Drunk Driving), has argued for more control of alcohol use and greater punishments for drink-driving offences but with less obvious public recognition than the Betts ecstasy campaign. One possible explanation for this imbalance that has been alleged is that the anti-ecstasy campaign was supported by groups or individuals with financial interests in the alcohol industry because they feared a culture shift in young people away from alcohol to ecstasy and related dance drugs. Another is that there is little political will, as many politicians have financial interests in companies that profit from alcohol. The new open-all-hours drinking legislation that flies in the face of common sense, proven harm reduction policies, as well as the Cabinet Office's own report on alcohol, may be further evidence of this. Of course the major contribution that alcohol taxes make to the Exchequer is another factor to be considered.

Why is ecstasy illegal when alcohol, a considerably more harmful drug, is not? For alcohol it appears to be because it has always been so, at least in western society with the exception of the Prohibition era in the USA. Interestingly ecstasy was only made illegal in the 1980s purportedly in an attempt to deter use by young people. This policy clearly didn't work very well as at the height of the rave scene up to one million young people were using each week. In view of this high level of use it may be that campaigns to reduce ecstasy use might paradoxically increase harm if they lead to increased use of alcohol.

So was David Cameron right? Both ACPO (the Association of Chief Police Officers) and the Liberal Democrats have previously stated that ecstasy should be downgraded. In the most recent systematic review of the drug laws, the Ruciman committee applied a new system of harm evaluation to all illicit drugs and found ecstasy to be significantly less harmful than most other Class A and even many Class B drugs (Police Foundation, 1999). When we consider that the possession of a drug that is much less dangerous than alcohol can lead to a 7 year prison sentence, whereas alcohol use is actively promoted, perhaps David Cameron did not go far enough? The recent Fore*sight* report 'Brain science, addiction and drugs' has highlighted the paradoxical distinctions in regulation of alcohol and tobacco compared with other drugs (Fore*sight*, 2005). Given the current situation apparently increases the harms of alcohol perhaps it is time for a sensible public debate on these issues.

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Table 1 Relative harms of the two E drugs

The two Es	Premature Deaths pa UK	Safety in overdose	Brain damage	Interpersonal violence	RTA deaths pa	cirrhosis	Heart damage	Costs to society £B	Contribution to the exchequer £B
ethanol	22 000	10 x pleasure dose	yes	10 000+ cases per yr	1500	++ and growing	++	18.5	£50
ecstasy	10	15 x	unsure	0	0	0	0	0.01	0

RTA = road traffic accidents

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