# Policy forum
# The concept of 'drug harms'

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Recently, David Nutt , Leslie King and Lawrence Philips published an article in *The Lancet* (Nutt *et al*, 2010) on how to rank drug harms between 20 different drugs available in the UK. They describe a procedure by which an unknown number of drug experts rank these drugs on 16 criteria on a scale of 0 to 100. According to this decision-making process, the most dangerous drug is alcohol with a score of 72 (out of 100), followed by heroin (score 55), crack cocaine (score 54) and methamphetamine (score 33). On their scale, a drug that was perceived as extremely harmful and even neurotoxic two decades ago gets a score of no more than 9 (ecstasy).

The inference that drugs cause harm is so accepted that few would even think of asking questions about how we know this. Still, the answer is not easy to give, since many users of all the ranked drugs will never suffer any harm. It is like participating in heavy urban traffic: some participants will get wounded or even killed, but most will never suffer any harm or other negative consequences.

I would like to comment on the ranking of drugs in terms of their harmfulness that Nutt and colleagues propose, on the basis of a particular expert-driven decision-making procedure. The question is, of course, whether drug harm can be estimated and ranked in a valid way by experts, without any quantifiable and quantified definition of harm, or indices of risk. My answer to this question is 'no' and in the following text I want to explain why.

I want to start this discussion by saying that the attempt by Nutt and colleagues to question present rankings as expressed by legislation is useful and applaudable. The reasons why cannabis or opium were declared illegal, at some point in

time, are all but forgotten. The alleged harms of these compounds are different in different countries, as are the severity of legal consequences that result from being caught using them. To complicate matters, ideas about harm and practical consequences will vary over time (Cohen, 2008). Still, both drugs are prohibited worldwide under the UN drug conventions, and most national legislations are derived from these conventions. Questioning the perceived harms, as do Nutt and colleagues, and the differential severity of legal consequences of using these drugs, is legitimate, because they are based on constructions of drug harms that are far from scientific or even rational. So, my comment is not directed at questioning existing rankings, but at 'improving' them by using a questionnaire type of ranking system as proposed by Nutt and colleagues.

Nutt is by profession a psychopharmacologist and, like other pharmacologists, tends to ascribe intrinsic harms to drug compounds when they are used for consumption. This commentator is a sociologist and by definition will evaluate possibilities of harm correlated to drug use in an interaction between drug user, drug compound and cultural context of use. Drugs, unlike poisons, are consumed by humans without any harmful consequences. The question is under which individual or social circumstances and dosage conditions drugs can become socially risky, physically harmful and even lethal, like particular poisons.

A different but related question is: when does one know a particular harm is caused by a drug? A driver who has 120 millilitres of alcohol in her blood and is not able to safely drive a car will be diagnosed as dangerous because of alcohol

consumption. In this example, there is little reason to deny such an observation a high level of validity. High dosage alcohol consumption is not only directly associated with a particular driving behaviour, but a quantified level of blood/alcohol mix can be established by perfected measuring instruments. Each driver can be observed, measured and put into a database. Sampling observations in traffic, one will find that many drivers have a zero alcohol blood level. In well-designed traffic evaluation projects that are repeated a sufficient number of times, it is possible to create an index of drunken driving probability and severity for a particular area on a particularly day of the week (eg. Greater London on a Saturday night). Doing exactly the same measuring in Liverpool or the Frisian town of Heerenveen or the Tuscan town of Volterra may give very different outcomes and not only on a Saturday night. Even in the case of a well quantifiable and undebatable harm, drunken driving, local circumstances, day of the week and consumption cultures will make supra local generalisations of the prevalence of *alcohol harm drunken driving* impossible. Nutt and colleagues use a criterion with the name of *'drug specific mortality'*. They do not offer a proposal of how to define or measure this. One probably needs a lot of high-quality data to make estimates for such a criterion. As we know in the case of drug-related deaths, one of the indicators used by the Lisbon-based European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), measuring this is difficult, let alone making comparisons between countries. In the criteria to gauge harms proposed by Nutt and colleagues, a series of harms is mentioned, such as *'drug induced impairment of functioning'* or *'loss of relationships'*. Such harms have to be estimated, again and again in each case where the harm is supposed to exist, but often without the benefit of clear quantification and measuring instruments. Therefore, estimates of such harms that are generalisable for a large number of consumers is very hard and, I would safely assume, even impossible.

I will not review all the criteria that Nutt and colleagues propose in their article. However, once the difficulty of 'criteria' and their measurement is established, let us look at the way that Nutt and colleagues have found to deal with these difficulties. They overruled all practical measurement difficulties and asked a number of experts to score drugs on the 16 criteria that are used in the project. The scoring procedure, its preparation and the later processing of the scores result, according to Nutt and colleagues, in a 'ratio scale' per harm and per drug. I strongly doubt this, but it is not my main doubt in relation to the scoring system. If my description of the difficulties of defining and measuring 'drug harms' is correct at all, how could one expect a number of experts to establish scores on these harms? Is it enough to rely on their always limited knowledge and experience with these drugs and the harms associated with them?

Would I get the same scores by asking highly experienced experts from the Christian drug assistence in Dordrecht near Rotterdam, and from the public inner city experts working in Amsterdam or Madrid? Would I get a valid score by mixing experts from different ideological and experiential backgrounds? Should I definitely include experts from outside the country or experts used to work with university students? Or with prison inmates? How do I construct a panel of experts that will score drug harms, on a scale of 100, in approximately the same way as another panel?

In short, even if I use a panel of 10 or 15 different experts, how can I know their combined and processed scores are indicative for the real harm of a drug without any quantitative measure per drug harm as validation?

Is it thinkable that, if I asked an expert panel to produce scores on well-explained criteria in order to produce a ranking of these harms, I would get a different result each time I produce a panel? And even if I got similar scores and rankings across different panels, how would I know these rankings are based on valid 'knowledge'? Could it be that harms associated with the most conspicuous user types and drug use patterns produce a ranking that is shared between panels? However, if I examined these associations of harms in other user groups and for other use patterns, would the harms disappear or change? (A recent and quite spectacular review of the quality of drug perceptions by experts (better to say misperceptions) can be found in the first two chapters of Reinarman and Levine (1997).)

Apparently, it is possible to ask people – experts – to communicate their perceptions of drug harms to the best of their knowledge. But the result would just be some panel outcome, nothing more.

The same is true of other harms, of course. Millions of people are scuba divers, and expert scuba divers exist. But their knowledge about the risks and harms of scuba diving are very restricted. Only large, well-designed samples of scuba divers and the precise measurement of well-defined harm could produce safe estimates of diving risks and their prevalence.

## What to do?

In my view, perceived harms associated with drugs are vulnerable to so many restrictions on reliability and validity that, for the time being, a serious estimate of drug harm per drug is impossible. In my view, it is even invalid to associate harms to drugs alone. Drugs are used by humans, under individual, social and legal conditions, in certain purities and dosages. Whatever the 'effects' of drugs, harmful or not, they cannot be estimated or even discussed without associating the drug with a particular user or user culture. Drugs *per se* do not meaningfully exist.

Without some prior agreement about which set of variables of user characteristics, cultural context and drug dosage and purity is used, even a measure of minimally standardised 'drug harm' cannot be established. Without such prior agreements, serious evaluation of drug harm is an illusion. Why else would the Organisation for Economic Co-operation and Development (OECD) have to spend years discussing how to create a standardised measurement of 'unemployment' and how to measure its composites? Quite probably, the harm ranking that Nutt and colleagues have produced, with the most prevalent drug (alcohol) at number one and one of the least used drugs (heroin) at number two, is a function of popular perceptions among experts. And popular perceptions change and change over time. No amount of sophisticated statistical processing of the combined perceptions of experts can overcome this.

## References

Cohen P (2008) *The Culture of the Ban on Cannabis: Is it political laziness and lack of interest that keep this farcical blunder afloat?* Paper delivered to the conference on 'Cannabis-growing in the Low Countries', University of Ghent, 3–4 December 2007. Available at: www.cedro-uva.org/lib/cohen.cannabisverbod.en.html (accessed November 2010).

Nutt D, King LA & Philips LD (2010) Drug harms in the UK: a multicriteria decision analysis. *The Lancet* **376** (9752) 1558–1565.

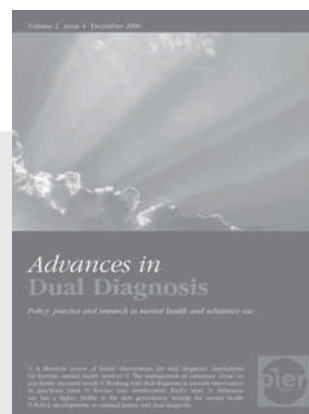Reinarman C and Levine H (Eds) (1997) *Crack in America. Demon drugs and social justice.* Berkeley, CA: University of California Press.