

Impact case study (REF3b)

Institution: University of Bristol
Unit of Assessment: 4 – Psychology, Psychiatry and Neuroscience
Title of case study: Innovative approach to assessing drug harms has major impact on government policy and public awareness
<p>1. Summary of the impact</p> <p>A new, more structured way of assessing the various harms done to individuals, families, communities and wider society by a range of legal and illegal drugs was first articulated by Professor David Nutt and colleagues at the University of Bristol. The “rational scale” they developed in the light of their research has stimulated extensive policy debate and informed drug classification in the UK and overseas. The research underpinning the scale has been disseminated through numerous public lectures and discussions and has stimulated worldwide media coverage. As a consequence, public awareness of drug harms has increased and public engagement in important debates about drugs has intensified.</p>
<p>2. Underpinning research</p> <p>Background</p> <p>David Nutt (now at Imperial College) was appointed by the University Bristol in 1988 to head up the Psychopharmacology Unit and was employed at Bristol until August 2009. The Psychopharmacology unit has provided the research environment for Nutt and an interdisciplinary team of PIs to study how drugs affect the brain. During his time at Bristol, Nutt explored the brain mechanisms of drug addiction and their treatment implications, particularly in terms of the neurochemical and molecular actions of drugs of abuse [1]. This research into the nature of drug addiction fed into the development of the concept of harm assessment, which Nutt first articulated in the Runciman report [2]. The report considered the social changes that had taken place since the Misuse of Drugs Act 1971, and assessed whether that law needed to be revised to make it more effective and responsive to those changes. Nutt’s major contribution to this report was the concept and development of a structure for assessing drug harms. This structure was further developed in the Foresight Brain Science, Addiction and Drugs Project (launched in July 2005), which aimed to provide an evidence-based vision of how scientific and technological advancement may impact on our understanding of addiction and drug use over the next 20 years [3]. Nutt, a key science expert on this project, employed his expertise on drug addiction to develop a comprehensive matrix and multi-dimensional assessment of drug harms. This rational scale was published in <i>Lancet</i> in 2007 [4]. Nutt put the scale into action in 2008 in his role as Chair of the Advisory Council on the Misuse of Drugs (ACMD).</p> <p>Comprehensive matrix defines nine parameters of harm</p> <p>The drug harms rational scale published by Nutt and his colleagues [4] differs from previous work in that it: i) includes more parameters of harm; ii) uses a structured communication technique, known as the Delphic approach, in the assessment process; and iii) is capable of responding to evolving evidence. The nine parameters of harm that form the matrix are: acute and chronic physical harm, intravenous harm, intensity of pleasure, psychological dependence, physical dependence, intoxication, other social harms and health-care costs [4]. These parameters are subgroups used to assess the three major categories of harm – physical harm to the individual user, tendency of the drug to induce dependence, and effect of the drug use on families, communities and society [4].</p> <p>The scale was tested by assessing five legal drugs of misuse (alcohol, khat, solvents, alkyl nitrites, and tobacco) and one that has since been classified (ketamine), as well as illegal drugs classified as class A, B or C under the Misuse of Drugs Act [4]. The process proved practicable, and yielded similar scores and rankings of drug harm when used by two separate groups of experts. The rational scale offers a systematic framework and process that is both rigorous and transparent. It is now used by national and international regulatory bodies to assess the harm of current and future drugs of abuse.</p> <p>Results using rational scale raise questions regarding current classification system</p> <p>The 2007 study [4] raised questions regarding the validity of the Misuse of Drugs Act 1971 classification system, which serves to determine the penalties for the possession and supply of</p>

controlled substances. There was a low correlation between a drug's classification under the Act and its harm score. For example, unclassified drugs such as tobacco and alcohol were ranked by the scale as equally or more harmful than LSD and ecstasy [4]. The mismatch between classification by the Act and the rational scale was illustrated in a paper published by Nutt in 2009, which assessed the relative harms of horse riding as if it were a drug, termed "equasy" [5]. The statistics for equasy (e.g., the number of associated road traffic accidents per year, the number of deaths and the number of cases of neurological damage) were such that the ACMD would likely recommend that equasy be classified as a Class A drug – i.e., equasy should be considered more harmful than ecstasy. This paper therefore highlighted how the risks associated with sports are tolerated and perceived differently from the risks associated with drugs, thereby emphasizing the need for rational evidence for the assessment of the harms of drugs. The article ultimately led to Nutt being fired by the government from his position with the ACMD, but generated considerable media attention and raised public awareness of drug harms.

3. References to the research

- [1] Nutt, D.J. (1996) 'Addiction: brain mechanisms and their treatment implications', *Lancet*, 347:31-36. <<http://www.drugtext.org/Addiction/addiction-brain-mechanisms-and-their-treatment-implications.html>> Citations*=129
- [2] Runciman, Viscountess (chairman), Chesney, A., Fortso, R., Hamilton, J., Jenkins, S., Maynard, A., Murray, L. G., Nutt, D. J., O'Connor, D., Pearson, G., Wardle, I., Williams, B. and Zera, A. (2000) *Drugs and the Law: Report of the Independent Inquiry into the Misuse of Drugs Act 1971*, London: The Police Foundation. <http://www.police-foundation.org.uk/uploads/catalogerfiles/inquiry-into-the-misuse-of-drugs-2/drugs_and_the_law.pdf> Citations=15
- [3] Office of Science and Technology (2005) *Drug Futures 2025? Horizon Scan*. Foresight Brain Science, Addiction and Drugs Project. <<http://www.bis.gov.uk/foresight/our-work/projects/published-projects/brain-science/reports-and-publications/drugs-futures-2025>>
- [4] Nutt, D., King, L.A., Saulsbury, W. and Blakemore, C. (2007) 'Development of a rational scale to assess the harm of drugs of potential misuse', *Lancet*. 369:1047-1053. doi:10.1016/S0140-6736(07)60464-4. Citations=410
- [5] Nutt, D.J. (2009) 'Equasy - an overlooked addiction with implications for the current debate on drug harms', *J Psychopharmacol*, 23 (1):3-5. doi:10.1177/0269881108099672. Citations=33

*All citation values are from Google Scholar as of September 13th, 2013.

4. Details of the impact

Impact on public policy

The Advisory Council on the Misuse of Drugs (ACMD) provides scientific advice on drugs policy to the Home Office, and the Home Secretary is obliged to consult the ACMD before making any changes to drug classification. In 2009, the ACMD took the initiative to adopt a multi-criteria decision-analysis tool for drug-harm decision-making, which was based on output 4 [a, pg 13], developed by Nutt at the University of Bristol.

Research informs political inquiry and debate on drug policy

Policy debate has been stimulated and moved forward by a rigorous, evidence-driven approach to drug classification, based on research carried out at Bristol [2-5]. The *Drug Futures 2025? Horizon Scan* [3] prompted the government to invite the Academy of Medical Sciences to consider several difficult and sensitive policy issues, including the increased sophistication and availability of recreational drugs and the need to take into account the harms of these drugs in regulatory approaches, and formulate recommendations for future research and policy needs. In their report, published in 2008, the Academy emphasised that new indices of harm should inform drug classification [b, pg 8].

The drug harms rational scale and underpinning research has been referred to extensively in political debates, including ones on drug use and possession [c] and controls on legal highs [d]. In 2009, Nutt's views on the relative harms of alcohol compared with illegal drugs were quoted frequently during a debate on the Penalties for Disorderly Behaviour (Amount of Penalty) Amendment Order 2009 to make the point that government is "ignoring all the scientific evidence" relevant to drugs and criminal activity posing danger to individuals [e].

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Reviews and recommendations carried out by various bodies [2-3] have repeatedly stated the need to review the Misuse of Drugs Act 1971 and introduce more rigorous and transparent methods of assessing drug harms. In 2012, Nutt was a witness to the House of Commons Home Affairs Committee, which released a review that again stated the need for a “fundamental review of all UK drugs policy” [f]. The drug harms rational scale has provided a “frame of reference as a society to grapple with these issues” [g].

Rational scale reaches beyond the UK The Ministry of Health in the Netherlands commissioned a drug-ranking method based on the rational scale [h]. The resulting report recommended guidelines for reclassification be considered in the future, including a ranking approach [h]. The rational scale was used in New Zealand where it was scrutinised by The Law Commission as part of their review and recommendations regarding reform of New Zealand drug classification and control [i]. In stressing the importance of a full scale review to assess the appropriate drug classification should a three-tiered system be retained, the Commission used Nutt’s rational scale as an example of how current classification may not reflect the relative harm of the drugs [i, 6.98]. In May 2011, the Swedish Supreme Court conducted a trial where the central issue was how mephedrone was to be assessed with respect to its hazards. Nutt’s research was brought up by “several participants” as the “only scientific study assessing the hazards of a number of drugs” [j].

Raising public awareness Public awareness of drug harms has been increased through numerous public lectures (e.g., at King’s College London and the universities of Leeds, Oxford, Newcastle and Derby) and TV programmes based on Nutt’s research into drug addiction, its underlying biology and how to treat it (output [1] is one of over 150 papers Nutt has authored on the subject), as well as his work on drug classification and relative harms. TV and radio programmes include:

- Horizon Programme (5 February 2008) (Audiences average between 2.5 and 3 million.)
- BBC News HARDtalk (May 2009) (HARDtalk is a flagship news programme on BBC World, BBC News Channel and the BBC World Service.)
- BBC Radio 4’s Today Programme interview with David Nutt (31 October 2009) (Today has approximately 7 million listeners.)
- Radio 4 broadcast, “On the Ropes” (15 March 2011) (Radio 4 had an average weekly audience of 10.83 million listeners in 2011 when this episode was aired.)
- Channel 4, “The ecstasy trial” (20 November 2012) (This show took an 11.4% audience share when it aired, with nearly 2 million viewers. It was the most downloaded C4 programme ever.)
- BBC4, “The Brain: A Secret History”, three-part series (6, 13 & 20 January 2011) (The series had 983,000 viewers.)

The drug harms scale has generated considerable media attention and the sacking of Nutt from the ACMD in 2009 escalated media discussion on drug policy and reform. Examples include:

- Transform Drug Policy Foundation, “Ecstasy reclassification meltdown; it begins again” (21 May 2008)
- Travis, A., “Chief drug adviser David Nutt sacked over cannabis stance”, *The Guardian* (30 October 2009)
- Doward, J., Hinsliff, G. and McKie, R., “Ministers face rebellion over drug tsar’s sacking”, *The Observer* (1 November 2009)
- Brown, A.M., “Will the sacking of drugs expert Professor David Nutt deter other scientists from advising government?”, *The Telegraph Blog* (31 October 2009)
- Sullum, J., “U.K. ‘Drugs Tsar’ gets sack for telling the truth”, *Reason* (2 November 2009)
- MaryJane, “Which are the most harmful drugs?”, *DrugSense* (19 December 2010)
- 12,581 followers on David Nutt’s blog “Evidence not Exaggeration”
<<http://profdavidnutt.wordpress.com/>>
- 17,293 followers of David Nutt on Twitter (as of June 10, 2013)

There has been increased public interest and discussion on the harms of alcohol. For example, in May 2009 *The Guardian* published an article comparing alcohol and drugs entitled “Double standards on drink and drugs”. This generated 156 comments on *The Guardian* website and

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received six Facebook shares [k]. Just one year later, after Nutt's sacking, *The Guardian* published a similar article comparing alcohol and drugs, entitled "Alcohol 'more harmful than heroin or crack'". This generated 786 comments, 5,778 shares on Facebook and 698 tweets on Twitter [l]. Data from 2012 also show that there has been an 11% decrease in the litres of alcohol consumed per head per year since 2008 [m].

Symptomatic of the extent to which the drug harms rational scale is now embedded in the wider community is the fact that it features in popular fiction in a novel entitled *The Red House* by Mark Hadden; . It may also be worth mentioning that the term "nutt-sacked" was coined by the Urban Dictionary to mean getting fired for stating the facts.

In 2013 Nutt was awarded the John Maddox Prize for Standing up for Science. Commenting on the award Sir Paul Nurse, President of the Royal Society: said "The John Maddox Prize recognises the efforts of scientists to speak out on issues that matter to society, placing evidence into the limelight and battling to keep it there. This year's winner is a bold scientist who will inspire others to keep evidence at the centre of public and policy debates about science." [n]

5. Sources to corroborate the impact

[a] ACMD (2009) *Consideration of the use of Multi-Criteria Decision Analysis in drug harm decision making*. <<http://www.homeoffice.gov.uk/publications/agencies-public-bodies/acmd1/ACMD-multi-criteria-report?view=Binary>>.

[b] The Academy of Medical Sciences (2008) *Brain science, addiction and drugs*. An Academy of Medical Sciences working group report chaired by Professor Sir Gabriel Horn FRS FRCP. ISBN: 1-903401-18-6 <<http://www.acmedsci.ac.uk/p48prid47.html>>.

[c] House of Lords Debate (9 March 2011) Column 1679.

<<http://www.publications.parliament.uk/pa/ld201011/ldhansrd/text/110309-0002.htm#11030975000092>>.

[d] House of Commons Debate (9 September 2010), Column 159WH.

<<http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm100909/halltext/100909h0001.htm#10090910000149>>.

[e] House of Commons Debate (11 March 2009), Column 378-379.

<<http://www.publications.parliament.uk/pa/cm200809/cmhansrd/cm090311/debtext/90311-0016.htm>>.

[f] House of Commons Home Affairs Committee (2012) *Drugs: Breaking the Cycle*, Ninth Report of Session 2012-13, London: The Stationery Office Limited.

<<http://www.publications.parliament.uk/pa/cm201213/cmselect/cmhaff/184/184.pdf>>.

[g] CEO, National Treatment Agency for Substance Abuse.

[h] Laboratory for Toxicology, Pathology & Genetics, National Institute for Public Health and the Environment, The Netherlands.

[i] The Law Commission (2011) 'Drug Classification' In: *Controlling and Regulating Drugs – A Review of the Misuse of Drugs Act 1975*, Part 3 Convention Drugs, NZLC R122

<http://www.lawcom.govt.nz/sites/default/files/publications/2011/05/part_2_report_controlling_and_regulating_drugs.pdf>.

The New Zealand Law Commission considers Nutt's matrix of harms in extensive detail in its review and recommendations for reform of New Zealand drug classification and control. [Cites 4]

[j] Hartelius, J. (2012) *One hundred years of assessing hazards associated with narcotic drugs*, Swedish Carnegie Institute and Swedish Narcotic Officers' Association, Carnegie International Report Series 4: Stockholm <<http://media.carnegieinst.se/2012/04/hazards.pdf>> Evidence that Nutt's research was utilised in a Supreme Court Case in Sweden.

[k] Freedman, S. (19 May 2009) "Double standards on drink and drugs", *The Guardian*.

<<http://www.guardian.co.uk/commentisfree/2009/may/19/drugs-and-alcohol>>.

[l] Boseley, S. (1 November 2010) "Alcohol more harmful than heroin or crack", *The Guardian*.

<<http://www.guardian.co.uk/society/2010/nov/01/alcohol-more-harmful-than-heroin-crack>>.

[m] British Beer and Pub Association (March 4, 2013) "New figures show UK alcohol consumption down 3.3 per cent in 2012", URL: <http://www.beerandpub.com/news/new-figures-show-uk-alcohol-consumption-down-3-3-per-cent-in-2012> [accessed online 10th June 2013].

[n] Official press release for the John Maddox Prize 2013 including quotation from Sir Paul Nurse, President of the Royal Society